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The Journal of FINANCE

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TOWARD A THEORY OF BUSINESS FINANCE

THE NECESSARY INGREDIENTS OF A THEORY OF BUSINESS FINANCE*

CARL A. DAUTEN
Washington University

TO AN OUTSIDER it may appear to be incongruous that the present status of the field of business finance is such that there should be discussion of the ingredients of a theory in the field. In most established fields of knowledge there is some disagreement especially about peripheral areas, but a core of knowledge has been developed into generally accepted generalizations or theories in the field. This is not true in any area of business management but there are developments in all fields of business leading toward the formulation of a body of theory. As is to be expected in any field in which attempts are being made to develop acceptable and useful theoretical formulations from experience in the field there is not only little agreement but radically different approaches are being used in developing theory.

PROBLEMS IN DEVELOPING A THEORY OF BUSINESS FINANCE

The developing of a theory of business finance, or of marketing, personnel, or production is complicated because in the final analysis management at the top policy level is management of the business as a whole, not financial management, marketing management, personnel management, nor production management. Furthermore, there is at present no general agreement that a study of management can yield a worthwhile series of generalizations which can be devel-

* This paper by Carl A. Dauten and the following two papers, one by John Sagan and the other by J. Fred Weston, with discussions by Paul M. Van Arsdell, Bion B. Howard, and Charles M. Williams, were presented at a meeting of the American Finance Association in Detroit on December 30, 1954. The program was under the chairmanship of Miller Upton, Beloit College.

oped into a theory. Some hold that an inductive study of what is taking place in practice combined with deductive reasoning will provide the basis for formulating a theory of management. At the other extreme is a point of view which is almost an organismic one. According to this approach the management in any business is unique since it has developed with the business as an integral part of that business. The proper organization of management therefore does not depend upon any general principles or theory, but on a study of all factors in the past and present status of a particular business, both human and physical, and the development of the best organization for that business. In fact, some students of management feel that the most effective organization is that which is developed by the group as they work together and this is likely to be significantly different for different groups even when they are in similar situations. At the extreme it is almost a question of building a management structure around people as opposed to getting people to fit into an ideal management structure. Of course, most hold points of view somewhere between the extremes and these are not irreconcilable, but no generally accepted synthesis has been developed.

Another difficulty in developing a theory of business finance is that in any social science there is not only the question of what is being done in practcie, but also of what can or should be done. A theory of business finance cannot be developed solely from a study of what has occurred in the past, an analysis of such data, and the drawing of generalizations. For example, a study of the working-capital policies of corporations over a period of time will not necessarily provide the data for developing a theory of working capital. In the first place, in any such series studied over a period of time each figure is in a real sense unique since business fluctuations do not repeat themselves in any determinable pattern and this makes generalization difficult and unreliable.

Even more serious for developing a theory is the problem of determining whether in the light of experience what was done was what should have been done to best meet the objectives of the business. In any field in which decisions are made by human beings with varying backgrounds and abilities a study of past actions may only lead to principles which would perpetuate past errors or lead to new errors in the future. Since the business scene is a constantly changing one any guiding principles must also be dynamic in character. Therefore, any body of theory in finance to be of any value must be

continually adapted to changing conditions. Since it is often hard to recognize changing trends until they have been going on for some time it is difficult to keep an up-to-date body of theory in the field of business finance.

The problems and hazards are well illustrated by a formulation of a theory of business finance made in the 1920's by McKinsey and Meech in their outstanding book *Controlling the Finances of a Business*. The first part in addition to discussing the scope of finance discussed its relationship to other phases of business and the economy, especially the business cycle. These authors then applied these principles to financial planning both short run and long run, to sources of financing, and to control of capital disbursements, credit, and income. The principles were based on generalizations from past experience, but some would elicit a wry smile at the present time since they were based on an oversimplified view of business cycles. Any financial administrator who was using them as a guide in the late twenties would have had some very uncomplimentary things to say about business finance theory in 1930 and 1931 and what he might have said in 1932 is unfit to contemplate in a public meeting or in print.

The Scope of the Finance Function in Business

So much for the problems involved in developing a dynamic body of theory of business finance. Before discussing the ingredients of such a theory it is necessary to agree on the scope of the finance function in business. The text by Howard and Upton, *Introduction to Business Finance*, has a clear-cut definition which is helpful in delimiting the field. These authors define business finance as follows:[1]

> Before the meaning of business finance can be developed, however, appreciation of the meaning of finance itself is necessary. In its simplest sense finance refers to those activities involved in seeing that an individual or organization has the cash with which to pay its bills promptly. Although this statement is inadequate in that it fails to suggest to the reader the myriad of duties which must be performed in order to carry out such a seemingly simple task, it has the virtue of quickly focusing attention on the central concept. . . .
>
> For the purpose of the present text we shall broaden the concept somewhat by defining finance as that administrative area or set of administrative functions in an organization which have to do with the management of the flow of cash so that the organization will have the means to carry out its objectives as satisfactorily as possible and at the same time meet its obligations as they become due.

1. Howard and Upton, *Introduction to Business Finance* (New York: McGraw-Hill Book Co., Inc., 1953), pp. 3, 4.

Since finance is but one facet of business management it is desirable in order to develop a theory of business finance to examine somewhat more fully into the nature of the finance function in business and its relationship to other facets of management. Fortunately a study has been made recently by J. Fred Weston and published in the *Journal of Finance* which sheds some light on the finance function as it is carried out currently in a representative group of concerns which are the leaders in their respective industries. The major activities arranged in the order of the average amount of time spent on them are shown in Table 1.

TABLE 1

AVERAGE PERCENTAGE OF TIME SPENT ON FINANCE ACTIVITIES IN LARGE FIRMS

	Mean Amount of Time Spent on Activities (zeros included)
Accounting operations	12.9
Participate in long-range firm planning	8.4
Advise on expenditures for capital assets	7.4
Credits and collection	7.2
Contacts with commercial banks and other suppliers of short-term funds	7.1
Advise the board of directors	5.5
Preparation of long-term budgets	5.0
Preparation of cash budgets	4.8
Contacts with investment bankers	3.9
Revise and approve terms of contracts for capital acquisitions	2.8
Supervise cashiers	2.6
Advise on dividend policy	2.5
Planning security issues	2.0

Source: J. Fred Weston, "The Finance Function," *Journal of Finance* (September, 1954), p. 268.

The first item in amount of time spent, accounting operations, may be somewhat misleading since in many businesses the accounting and finance functions are combined. The other functions divide themselves into the following categories: financial planning and budgeting; contacts for long-run and short-run financing; supervision of cash and receivables; participation in and advice to top management on long-range planning, expenditures on capital assets, dividend policy, etc.

In addition a large number of other activities were mentioned as taking the time of the chief financial executive. Those occurring most frequently were administration, insurance, taxes, salary administration, supervision of subsidiary operations, stockholder re-

lations, donations and membership, pensions and welfare, and serving on other committees.

In 1952 the National Industrial Conference Board published a study on the *Duties of Financial Executives* which is described in the foreword as follows: "This report is the first comprehensive examination of the roles of the various financial executives commonly found in industry. The analysis is based entirely on current industrial practice."[2] They have listed the following activities as the functions of the major executive in the financial area:

> In general, most companies' concepts of the treasurer's job involve financial planning, cash management, banking relations, handling credit and collections and the custody of company assets. The controllership function encompasses accounting, control, auditing, tax management and financial interpretation. And where there is a vice-president of finance or a finance committee, they are usually responsible for financial planning, the establishment of financial policy, the assignment of functions to the financial staff, and over-all control.[3]

In a later section they also point out that one or more of the financial officers of the business are likely to be on the board of directors, committees of the board, and management committees in the business. Thus in a general way this study agrees with that of J. Fred Weston, and the activities can be placed into the same basic groups.

The basic definition of finance and these studies of financial activities can be used to express somewhat more explicitly the nature of the finance function in business. Some activities in the finance field are a basic responsibility of the financial administrators in a business. Other activities are a joint responsibility with those in charge of other phases of the business.

The responsibility for providing for the means of payment involves the obtaining of funds for the business from creditors and owners. All aspects of such financing are primary finance activities. This includes planning the amounts and types of financing, doing the financing, and checking to be sure all is going according to plan as well as constantly reviewing and revising plans.

In order to provide the means of payment the finance function must also be concerned with the use to which funds are to be put, that is, the items on the asset side of the balance sheet or position statement. Having sufficient cash on hand to pay bills when due is the very heart of the finance function. This involves basic planning

2. *The Duties of Financial Executives*, Studies in Business Policy, No. 56 (National Industrial Conference Board, Inc., 1952), p. 3.

3. *Ibid.*, p. 5.

to be sure cash is available when needed, the physical handling and safekeeping of the cash balances, and control over them not only to prevent theft, but also to be sure that plans in regard to cash are being carried out. The same is true of marketable securities held by a firm as a temporary investment of cash.

The relationship of receivables management to the finance function is similar in some respects to that of cash and marketable securities, but has a basic difference. Receivables are but one step removed from cash in the circular flow of working capital. In fact, sound receivables which are due currently are almost as liquid as marketable securities, and the cash comes in automatically. Furthermore, the handling of the mechanics of collecting receivables has usually been assigned as a finance function as shown in the studies cited. The difference comes in the development of credit policies. Whether to sell for credit, to what extent, and on what terms are part of the sales strategy of a firm and so not a basic finance function. Such questions have financial implications, however, since the funds which will be tied up in receivables must be made available, and any shift in policies will tie up a larger or smaller amount in receivables. Thus policy determination in this area involves sales and finance more directly than production or personnel. At the operating level of carrying out the policies, sales may also be involved since decisions to tighten up or relax collection procedures may have sales repercussions.

The relationship of inventories and fixed assets to the finance function is again somewhat different from that of receivables. Inventories are farther removed from cash in the circular flow of working capital than are receivables, and fixed assets are converted into cash even more slowly, but this is not the basic distinction. The total amount of funds invested in fixed assets is important since it must be financed, but of equal or greater importance is the suitability of the various types of assets for the production function they are to perform. This is a primary responsibility of those in charge of the production activity in a business. In the same way the types of goods to be kept in inventory and the amounts of each are a basic part of the sales function. The total amount invested is of basic significance to finance since funds must be supplied to finance inventory and fixed assets, but the detailed planning for capital assets and inventories and the day-to-day activities in these fields are not.

The provision of the means of payment has another basic facet to it. It is impossible to get funds for a business if the return avail-

able for such funds is not sufficient to attract them. Therefore, the finance function is related to income and expense management. The amount of operating income and the factors determining it are of interest only to the extent that the income must be large enough so that a plan of financing can be worked out which will attract the needed capital. However, activities and problems related to paying interest on long-term and short-term loans, paying dividends, and retaining income in the business are a basic part of the finance function since these factors are of basic significance in determining the ability of a business to raise funds.

Thus the finance function in business can be divided into the following areas:

1. Planning the amounts and types of financing, doing the financing, and checking to be sure that plans are being carried out
2. Management of the money resources of a business including cash and marketable securities
3. Management of the receivables, but joint responsibility with marketing in developing and carrying out credit policies
4. Participation in determining the over-all amounts and general policies of investment in inventories and fixed assets
5. Participation in planning general policies on income and expenses and primary responsibility for financial expenses

The studies on the functions of financial executives showed they spent a substantial amount of time on accounting operations. This is in part because financial planning as developed in budgets is often designated as part of the accounting process in a business. In many cases financial officers also have supervision over accounting operations. Accounting is a staff function which supplies data to top management, financial management, sales management, production management, and personnel management. It is not a part of the finance function even though in some businesses it has been found desirable to combine at least some aspects of accounting with finance functions in the organization structure.

The Relationship of the Finance Function to Top Management

To develop fully the nature of the finance function would require analyzing in detail how each of these areas is related to top management and to operating management. However, for the purpose at hand of discussing ingredients of a theory it is only necessary to relate them in a general way. Top management is engaged in so

planning, organizing, and controlling the operations of a business as to achieve the goals of the business. Since any policy decision such as a decision to produce a new product has production, sales personnel, and financial implications, top management cannot in the final analysis be separated. The final decision based on a weighing of all of these factors can only be made by the executive with final authority or by committee action.

The several activities in the field of finance bear a differing relationship to top management decision-making. In the financing area major decisions on when and how to finance are a top management function, in fact a board of directors function. The finance man is the major advisor to top management in this area, but the policy determination as to when and how to finance is still a top management function. The carrying out of the policies is a finance function at the operating level. The same thing is true in the area of the management of cash and marketable securities. The policies on how much cash to keep on hand, whether to invest some of it in securities, and in what types, are top management decisions with the chief financial officer being the advisor in this area. The day-to-day handling of cash and the carrying out of the investment of part of it, if that has been decided upon, is a finance function at the operating level. In the management of receivables, general policies are again part of the top management function, more detailed policies are a joint responsibility of marketing and finance, and so are some phases of day-to-day carrying out of the policies. When the finance man participates in determining policies for investment in inventories and fixed assets he is doing so as part of top management. The same is true of participation in policy development in the over-all income and expense area. The responsibility for determining policies in regard to income retention and dividend policy is one of top management, but the carrying out of the policies is a finance function at the operating level.

Basic Ingredients of a Theory of Finance

A complete body of theory in the business finance field would include all phases of the finance function both at the top management level and at the operating level. Since it is impracticable in one paper to discuss ingredients of a body of theory at both levels this paper will be limited to the top management level. The financial manager as an integral part of top management must so shape the decisions and recommendations he makes that they will contribute to the over-all goals of the business. He will also be

involved in determining these goals since this is a part of the top management function. The determination of goals is in itself complex since many businessmen do not plan their operations so as to maximize short-run profits. Profits over the long pull, position in the industry, short-run liquidity, long-run solvency, and similar factors are often more important. In a free enterprise economy top management faces an additional challenge. Not only must business policies be geared to the economic and business structure of the economy, but the policies of an individual business should be so developed as to further the goals of the economy. There is probably no complete agreement on the detailed goals of a free enterprise economy but most would agree that the basic goal is a continued rise in real income which must not be achieved at the expense of the freedom of the individual. Most people would also agree that in achieving such a goal of rising real income a reasonable degree of stability should be maintained. To the extent that stability and progress may not be compatible a balance must be struck between them. The function of top management including financial management is to so manage a business that it can achieve its objectives in the existing framework of the economy and also help to achieve the objectives of the economy. This point of view has been ably expressed by the Research and Policy Committee of the Committee for Economic Development especially in their 1950 policy statement *How To Raise Real Wages* and their 1954 statement *What To Do about Recessions*. Their point of view on the responsibility of businessmen to work for stability is well expressed in a digest of the latter statement as follows:

> The decisions made by businesses, when added together, are crucial for making the economy stable or unstable. The individual businessman should do everything he can to help make the economy more stable, consistent with his responsibility for economic efficiency and expansion.
>
> First of all, the businessman can try to do better the things he already does well. He can develop new products to satisfy new wants. He can improve his production methods to cut costs and bring more products within the reach of more people. He can do a better job of selling.
>
> Equally important, he can and should do better the things he hasn't done so well in the past. For instance, he can plan his investment with more attention to prospects for the long-run growth of the economy. He can keep his inventory down to the minimum level needed for efficient operation, and avoid speculation. Extreme inventory fluctuations have been a major factor in past economic instability. He can build up his financial strength during good times so as to be prepared when a recession starts.[4]

4. *What To Do about Recessions*, A digest of a Statement on National Policy by the Research and Policy Committee of the Committee for Economic Development (New York, 1954), pp. 1, 2.

When approached from this point of view the theory of top business management, including financial management, is in a very real sense economic theory, the theory of the firm or microeconomics, and of aggregative economic relationships or macroeconomics. Much of such theory can be useful in decision-making as has been demonstrated by the managerial economics approach of men like Joel Dean, Joe Bain, Theodore Yntema, and others. It can become more useful as more empirical research is done on the nature of economic variables and economic theory is further refined to bring it more fully into line with empirical research.

In the various subareas of the finance function various subdivisions of economic theory are applicable. Such factors will be considered in turn for each major subdivision of the finance function in business, beginning with the financing function and the participation in the income and expense function which will be treated together since any plan of financing is only feasible if sufficient income is in prospect to make it possible. The financing should be done so as to achieve the goals of the business and the economy which means the determination of the optimum balances between such factors as short-run profitability, long-run profitability, providing sufficient funds to maintain the position of a company in the industry, maintaining short-run liquidity and long-run solvency, assuring continued economic progress, and helping to achieve stability in the economy as a whole. To make an intelligent decision on a policy to achieve the best balance between these factors requires a broad background rather than a narrow view of proper relationships between sources of financing. Basic is an understanding of the nature of business fluctuations and of the role of financing in such fluctuations. The financial manager should understand the nature of fluctuations in short-term interest rates and long-term interest rates; the amount of funds available to the economy from depreciation, and retained earnings and the amount needed externally; the trends toward institutional saving and financing; and the like. He should also understand the nature of the cycle in the security and money markets. National Bureau and other studies have shown that activities in the money market such as the volume of sales of stock and bonds and security prices are among the earliest to turn down in expansion and up again while business in general is contracting. Financial management should be carried out in such a way as to not only adapt financing to such cyclical changes, but to help smooth out the effect they have on further business expansion.

With such data as a background the decision of the financial manager on how to combine short-term and long-term borrowing and owner's equity can be made in the light of a forecast of the needs of the business and of the income it will have available for financing and of the trends in the financial markets and the economy. In fact, forecasting is the most basic ingredient of any financial decision. When not made explicitly there is still an implicit forecast that the present situation will continue, that the trend will continue, or some similar expectation. The forecasts needed for intelligent long-run financing involve both long-run and short-run forecasting of the supply of, and demand for, funds of various types and of interest rates. They also involve a forecast of the income available to the business for paying interest and dividends. The decision to issue a long-term bond should not be based on rules-of-thumb such as bonds not exceeding 50 per cent of fixed assets, not exceeding net working capital, or having a fixed-charge coverage of three or better, but on an analysis of all past and present factors in the situation and a forecast of future conditions in the money markets and in the income position of the business. In the light of these factors the decision should be one which best achieves the objectives of the business and of the economy. This would, of course, become easier if tax laws were revised somewhat further to reduce the tax advantages of bond financing.

A financial manager must also consider such factors as any typical patterns of financing which have been developed in his industry, the nature of the assets to be financed, the size of the business, its stage of development, its profit record, the full tax position, the relative cost of different methods of financing, and the like. The typical rules-of-thumb have to a large extent been developed on the basis of such factors.

The situation in the period since the end of World War II can be used to illustrate the nature of the problems involved in such decision-making. In the eight-and-one-half-year period from 1946 through mid-1954 American corporations invested $160 billion in plant and equipment and $95 billion in working capital, about half of which went for increased inventories. About one-third of these funds came from reinvested earnings, almost one-third from borrowing, 28 per cent from depreciation, and 7 per cent from new stock issues. As is to be expected, funds from depreciation went up almost steadily from $4.2 billion in 1946 to about $13 billion in 1954. Retained profits show no such upward trend over the whole

period. There are high points in funds supplied by retained earnings in 1948 and 1950 with a sizable downturn in 1949 and some decline in 1951 and 1952 and some rise in 1953 and from present indications also in 1954. The amount of funds raised by long-term borrowing and by stock issues was also relatively stable in most years, but fluctuated more than depreciation and retained earnings as a source of funds. The amount of short-term financing, however, fluctuated widely. It was large in 1947 and 1948, but declined somewhat in late 1948 and sharply in 1949. It went up sharply in 1950 and declined gradually thereafter and sharply in 1953 and 1954.[5]

These totals represent the results of the financing activities of hundreds of thousands of businesses. They were undoubtedly made in the light of the objectives of each business, but it is questionable if their combined effect on the economy and on financial markets was fully considered or if proper consideration was always given to long-run factors in the business. The wide variations in short-term borrowing affected the money markets materially. Due to the nature of the operation of our banking system they also affected the supply of purchasing media and thus the price level.

Several questions immediately come to mind regarding the financing in this period. Should one-third of the funds have come from retained earnings? Should this percentage have been smaller in 1953 and 1954 as business turned down? Should one-third of the funds have come from borrowing? Should depreciation supply an increasing share of funds on a straight-line basis or should some other basis be used such as a use basis which would vary the amount cyclically? Is 7 per cent from new stock issues and over four times as much from borrowing conducive to long-run business and economic stability? Should short-term borrowing fluctuate as widely as it does? An adequate theory of financing and of income management to aid such financing should provide guiding principles to answer such questions.

The ingredients of such a theory in the financing and income and expense management area can be summarized as follows:

An analysis of the secular, cyclical, and seasonal movements in the demand for, and supply of, long-term and short-term funds, and in the volume of financing in each area

An analysis of all factors determining interest rates, both long-term and short-term

5. S.E.C. and Department of Commerce data as reproduced in the October, 1954, issue of *Business in Brief* of the Chase National Bank.

An analysis of cyclical shifts in bond and stock financing and contracyclical stabilizing possibilities

Forecasting principles and procedures for total economic activity and especially for the capital markets and the financial needs and income of the business, both long-run and short-run.

An analysis of the effect of the industry, the nature of the assets, the size of the business, the stage in its development, its profit record, and the tax structure on the methods of financing.

Basic Ingredients of a Theory in the Cash and Receivables Management Area

The general statements about a knowledge of economic developments, developments in the economy and in the business, the use of forecasts as a basis for decision, and the balancing of all factors to achieve the objectives of the business and of the economy hold in each of the subareas of the finance function. Several special factors must also be considered in each area. In the management of cash and marketable securities such factors as the need for funds to bridge the gap between income and expenses, to meet future commitments, and to provide a cushion for emergencies are basic. The major need is for a guiding set of principles to follow in determining how much cash should be kept on hand to meet emergencies.

In developing such principles consideration must be given to the past record, present status, and future forecasts of such factors in the business as sales, income, expenses, changes in the amount and nature of assets, changes in the amount and methods of financing, and the like. Also significant are the relationship of cash balances to the rate of spending of a firm and the effect this has on general economic equilibrium. This involves such analysis as that of James E. Walter in his article in the December, 1953, *Journal of Finance* on "Liquidity and Corporate Spending." Also important are the relationship of monetary policies and the cash balances of business units. For example, a tightening of credit policies may force small concerns to contract and have little effect on larger concerns which have kept a large cash balance for emergency needs. If one of the objectives is over-all stability in the economy it will affect the use of such funds.

Another area of significance is the relationship of cash balance to fiscal policy, especially when such policy is designed to have deflationary effects. The major impact of higher corporate taxes comes not when the tax is paid, but when cash is built up to pay

the tax. The way in which the added tax funds are built up has an effect on the economy. In short, a theory of cash balances management must consider all aspects of money flows in the economy and in the business in question and their effects on economic conditions.

The receivables management area likewise has several special factors. An analysis should be made of past variations in receivables, especially those due to cyclical factors. The policy in regard to receivables should then be geared to the needs of the economy and of the business. For example, the volume of receivables may go up at a faster rate than sales as business expands because more people are in income and family status groups which use more credit, not because credit is being granted more liberally. This may well contribute to progress and stability even if the total volume of credit is up. It may also be desirable at certain stages of the cycle to promote stability by varying the ease of availability of credit and the terms of credit. The relationship to monetary policy is again significant as it was with cash balances.

The area of participating in decisions on over-all amounts to invest in fixed assets and inventories has some special problems, but it will only be treated briefly since major responsibility for these areas rests with sales and production. The effect of over-all investment on the financing plan of the business is important, especially cyclical shifts in the volume of funds needed. The analysis of such shifts in the past and possibilities for evening them out by adjusting inventory policies to the need for goods rather than speculative profits and planning capital investments on the basis of long-run needs are of major significance.

In summary the ingredients of a theory of business finance are economics, both of the individual firm and of the economy as a whole. All relevant factors in both areas must be balanced in the light of forecasts so as to achieve the optimum balance between the objective of the firm and of the economy.

TOWARD A THEORY OF WORKING CAPITAL MANAGEMENT

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THE FUNCTION OF ANY BUSINESS is to supply goods or services as required by the community. This can be restated as follows: raw materials are processed or services are channeled resulting in a product or service that is more valuable as measured by our price system than the original materials or the unchanneled services. In this productive process, labor is applied to raw materials which then become the finished inventory of the business. As sold, this is translated into receivables and ultimately into cash. The cash in turn is used to pay for raw materials, taxes, labor, plant, and equipment as well as to provide a return to the investors. Many individuals contribute to this repetitive and continuing process. In this paper I will discuss the role and function of that individual who is directly concerned with the management of the cash that has been generated by this productive process. This individual is the money manager of the firm.

All of us remember our first economic texts that described money as the lubricant that "oiled the wheels of industry." As an "oiler" it is the task of the money manager to insure that his firm has sufficient funds to operate. In addition, he must provide adequate safeguards for those assets intrusted to his care and invest temporarily surplus funds as profitably as possible in view of his particular requirements of safety and liquidity. The money manager ordinarily functions in many areas of a company. His operations affect all of the working capital accounts. However, in such areas as the determination of inventory levels other persons within the finance function and in production operations are more directly concerned. The subject of the control of inventories, receivables, and payables is worthy of a separate paper and I will only touch briefly on them here.

The net working capital of any corporation is the net current asset position or the excess of current assets over current liabilities. All cash, short-term investments,[1] receivables, and inventories are

1. From a money manager's point of view, the *intent* of the investment rather than the maturity determines whether a security should be included as a short-term

totaled and this total is compared to the current liabilities such as short-term debt, accounts payable, federal income tax, and other current liabilities. This gives a measure of the liquid position of the firm compared to the probable immediate demands on that liquid position.

While the basic working capital ratios are important to the financial analyst or to the creditor, they are of less importance to the money manager. The money manager's responsibility to provide funds as needed and to invest funds as available require that his operations be based on cash flows and the total current asset position rather than on any of the usual working capital tests. From an operational viewpoint, the money manager may be able temporarily to postpone borrowing even when his net working capital position is low if the liabilities, such as tax liabilities or other payables, are not immediately due. On the other hand, the money manager who has a sizable net working capital that is primarily in inventories or accounts receivable might be forced to borrow funds in order to meet early obligations.

Basic to any successful program of money management is a cash flow schedule or budget showing the movement of cash in and out of a company. Either formally, as in the larger corporation, or informally, whether the general manager, president, or proprietor realizes it or not, plans are formulated for future operations. Sales and production plans are made. Costs are estimated. Into such a cash flow schedule are placed the plans for additions to fixed assets, for purchases of other firms, for dividend payments. Borrowings of several or all types might be contemplated as well as provision for repayment of debt. These analyses of cash flows may have one name or another. They may be formal or informal, but the result is to have developed a cash flow schedule or a cash budget.

The money manager has the responsibility to channel the cash to the "operating" people for fixed assets, raw materials, payrolls, pension funds, dividends, and other needs at the time and in the amount required as spelled out by these schedules or budgets. In so doing, he must also manage the available funds in such a way as to maximize the use of temporarily "idle" funds coming from and going into the productive process that is the principal business of the enterprise.

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investment in current assets. When the longest government bonds, long corporate bonds, or even common stocks are purchased as a temporary investment medium for temporarily surplus funds, they rightly belong as a current asset in the company's balance sheet as long as they are marketable.

While the money manager's operations are primarily in the area of cash flows, he must be familiar with what is being done with the control of inventories, receivables, and payables. Each of these accounts should soon affect his company's cash position. Excessive inventories can drain funds needed for other purposes or might require borrowings. On the other hand, an interruption of production because of inventory shortages might be more costly than the extra inventories. In like fashion, during periods of rising prices, inventories that are higher than normal can prove to be profitable. Whether such speculation should be attempted depends, of course, on the philosophy of the entire management.

In any efficiently run money management operation there should be an emphasis on transforming accounts receivable into cash. Often changes in billing methods or billing dates will lower the total of receivables outstanding, and cash is accordingly increased. Similarly, an analysis of payables could result in a better utilization of available discount periods, and immediate cash needs may accordingly be deferred.

Cash Items

The cash items in the balance sheet take two forms, bank balances and the cash (marketable) investments. One might question why a company that was organized to make, say, watches has cash assets above an irreducible minimum rather than to invest these funds in the material or machines that will produce more watches. In most firms, however, one would discover that the cash items were maintained for some specific purpose with the ultimate aim of producing more watches and thus greater profits for the stockholders. A portion of the cash is needed for operating purposes. Any well-organized company needs bank balances to enable it to pay its bills, meet its payroll, to cover its uncollected checks, and other similar purposes. A part of the cash items might be funds that have been set aside for accrued tax liabilities. Thus the firm has a custodial relationship of these funds. In the same way, the company might be setting aside funds to cover a dividend payment or some other disbursement.

Depreciation and depletion charges provide a cash inflow to the company. Replacement of plant and equipment usually does not occur simultaneously with the cash recapture of depreciation charges, so that current assets will be increased accordingly. These funds will be available for corporate use, often for temporary investment, until the new equipment is purchased or other disposition of the funds is made. In some companies, a portion of retained

earnings will be set aside to cover future fixed asset additions. Thus the cash will be expended according to a time schedule as shown in a cash forecast. Funds to repay debt or redeem preferred stock might also be maintained temporarily as cash items until such time that repayment is made.

Cash items that are maintained for each of these purposes might well take different forms. Operating cash needs normally are covered by bank balances or the most highly marketable securities. United States Treasury bills can normally fulfil this need. The form of the cash item for the other needs varies widely among companies but securities with less liquidity might be used.

CASH

The money manager is concerned with having funds available to meet current expenditures or for investment. As his receivables are collected, it is his responsibility to convert these checks into usable funds. An analysis of his banking methods might uncover methods of improving the inflow of his cash by presenting checks to the paying banks faster. Part of his cash frequently is in the form of both undeposited and uncollected checks. Accordingly, if he is able to deposit checks faster and thus reduce this amount of unavailable cash he can reduce his cash needs. Let me give you a concrete example of this. Our cars and trucks normally are delivered to our dealers on auto transports and in many cases the dealer will pay the driver of the transport for the vehicles. These we call our C.O.D. deliveries. In past years, the driver would carry the check back to his office for transmittal to our assembly plant controller. This could involve as much as a week to ten days between the time that the dealer gave his check to the driver until the time that we had disbursable funds. Under a recently adopted method, the driver of the transport now places the check in a mail deposit envelope and airmails it directly to our bank. The bank advises the assembly plant controller of the receipt of the check giving him full particulars as to dealer name, invoice, etc. The check meanwhile has been submitted for payment to the dealer's bank and the money manager has usable funds rather than an account receivable. There are many methods such as this that can improve the collection of funds.

Before these details are analyzed the money manager should appraise his operating cash needs. The level of operational cash needs depends primarily on the scope of the business and its type. A business whose sales are relatively large compared to assets nor-

mally requires larger bank balances to support these sales than a business of similar asset size but with smaller sales. Generally the larger the sales, the larger is the amount of money tied up each day as uncollected funds in cash receipts. Many corporations employ a rule-of-thumb and maintain cash balances at some multiple of average daily sales. Those companies subject to sudden cash drains often maintain additional cash balances for such occasions. Many companies maintain balances over and above these amounts as a means of compensating banks for services rendered. The determination of the size of the bank balances that a firm maintains cannot be considered a science—it is an imperfect art. It is an art, however, in which the money manager must appraise the value of his banking relationship and weigh it against the possible income that can be earned on balances in excess of some irreducible minimum.

In addition to determining the size of bank accounts, the money manager must decide where to maintain bank accounts. Here the approach is even more "artful." Obviously, a nationwide corporation needs depositaries throughout the country, while a localized business may be well served by one or two banks. Banking relationships ordinarily are maintained in those territories or financial centers that enable the money manager to collect his receipts most promptly and facilitate the transfer of funds from area to area most easily. In recent years we have taken the soundness of banks for granted and have relied on governmental agencies to determine the safety factors behind deposits in various depository banks. Where a company's bank balance is above the insured amount, the money manager should evaluate the soundness of the bank for himself. In general, banks are very co-operative in supplying the information needed to determine the safety factors behind deposits. Any analysis should cover the following points: What capital is available as protection for deposits? How much of the capital structure is tied up in real estate? What is the composition of the bank's assets? How liquid are the assets? What proportion of the loans are governmentally guaranteed?

An analysis of these factors, as well as an evaluation of the bank management, will provide an appraisal of the safety factors protecting a company's bank deposits. While the extent of any such analysis may depend on the size of the bank balances involved and the available manpower, even the small firm should attempt to determine the soundness of its depositaries.

CASH INVESTMENTS

When cash or bank balances reach some predetermined level, further increases in cash are usually applied to reduce borrowings, or to purchase marketable securities as a temporary cash investment.

Any program for investing temporarily surplus cash must be based on the probable demands for those funds. Thus, the maturity schedules of a cash investment portfolio must be planned accordingly. The normal medium for the investment of these funds is in U.S. government securities. Credit risks are minimized by investing in government securities. At the end of 1953, corporations held $21.4 billion in government securities compared with $31.1 billion in cash. The size and activity of this security market are such that large amounts of most issues can be traded on a short notice. While the liquidity of government securities is of the highest order, there have been times in the past when even Treasury bills could not be sold easily in large amounts. Any money manager must, therefore, take into account the cash drains that may face him and plan his investment program accordingly.

There are many types of government securities that are ordinarily available for corporate short-term investment.

1. *U.S. Treasury bills.*—These securities are sold at a weekly auction by the Treasury through competitive bidding. At present, the Treasury sells each week $1.5 billion bills that mature 91 days later. Thus, thirteen separate maturities are outstanding at all times. Since a group of bills matures each week, the money manager can often purchase bills that will mature on or near dates of his company's large cash drains, such as dividend payments. In this way, he minimizes any market risk and is certain of having funds when they are needed. Purchases of $200,000 or less can be made on a non-competitive basis at the Treasury bill average price each week. This enables the small company to get a high return with a minimum amount of effort. Corporations are the largest holders of Treasury bills and these securities have an important place among the current assets of any well-run money management program.

2. *Tax anticipation bills or certificates.*—From time to time the Treasury offers tax anticipation bills or certificates that mature a few days after tax dates but can be submitted for the payment of federal income taxes with full interest paid to the date of maturity. At present there are $3.9 billion of 1 per cent tax anticipation certificates outstanding that mature on March 22, 1955, but can be used for payment of income taxes on March 15 with interest paid

through March 22. Tax issues are ideally suited for investing tax accrual funds because there is no market risk at the tax date and the extra days' interest improves the yield. These securities are quoted by all the government securities dealers and are actively traded.

3. *Savings notes.*—Saving notes had been offered by the Treasury up until October of last year. These securities mature in two to three years from the date of purchase but are redeemable on demand. When these securities were available, they provided an ideal medium for cash investments. Their redeemability on demand made them perfectly liquid[2] for the most immediate needs, while holding them to maturity made them an attractive investment medium for less immediately needed funds.

4. *Other U.S. government securities.*—Treasury notes, certificates of indebtedness, and bonds are widely used as media for cash investment funds. There are many issues of the foregoing from which to choose. Certificates are normally issued to mature twelve months after date of issue. Notes mature up to five years after the date of issue. Bonds mature from five years to as long as thirty years from the date of issue.

These securities normally sell to yield higher rates of return to the purchaser than do the shorter-term securities. In addition, certificates, notes, and bonds usually carry "rights values" on maturity. That is, the maturing security frequently has a privilege which enables the holder to exchange it for a new issue. In order to insure success of security exchange offerings, the Treasury usually prices the new issue attractively compared to the existing interest yield pattern.

These securities are actively traded in the money market and maturities extending over a wide range of years are available. Since as many as a half-dozen or more of these issues mature each year, maturity dates might coincide with dates of cash drains. Because of the "rights values" mentioned above, however, the shortest maturities of these securities often sell at lower yields than do bills or tax anticipation issues. Purchases of these shortest issues often require a high degree of knowledge of the money market and its operation.

While investing in anticipation of the rights having some value does entail some degree of risk, the risk may be small relative to

2. They can be redeemed on the fifteenth of any month with full interest. At other times, they can be redeemed on demand at face value with interest paid to the previous fifteenth of the month.

the gain that can be realized. This becomes even more important when the securities have been held more than six months and the appreciation can be considered as long-term capital gains, taxable at 26 per cent rather than the 52 per cent tax imposed on ordinary income.

It is always a temptation for a money manager to attempt to improve the earnings of his cash investments by extending the maturity of investments beyond the period when the cash budget indicates that the funds will be spent. While there is no "correct" limitation on the maturity of these assets, one must always be prepared to assume extreme fluctuations in market values if longer-term securities are purchased. Those money managers that purchased the Victories (2½ per cent bonds due 12/15/67–72) at approximately par in 1951 must have experienced some sleepless nights around the middle of 1953 when these bonds sold below 90.

There are other investment media that are and can be used for the investment of temporary funds. Funds can be placed into bank time deposits, commercial paper, U.S. government agency securities, tax exempt securities, bankers acceptances, and railway equipment trust certificates. All of these provide yields above the riskless rental rate of capital (U.S. Governments) because each of them entails some loss of liquidity, safety, or ability to trade in large amounts. The money manager must decide whether the yield differentials are large enough to overcome some of the risks and other shortcomings of each of these alternative investment media.

The policies that corporations follow in their cash investments vary widely. Those companies that are subject to large and unexpected cash drains should insist on a high degree of liquidity for the major portion of their investments even though the yield on investments is accordingly lowered. Those companies, on the other hand, whose cash flows are easily predicted can utilize funds not immediately needed to purchase less marketable securities that will mature on or near the dates of indicated cash need.

Summary.—Working capital ratios are useful tools in appraising the financial strength and immediate solvency of a company. The financial analyst must rely on these ratios. From an operational point of view, however, the money manager's primary concern is with the current cash flows and those flows expected in the near future. He can take little comfort in a satisfactory working capital ratio when he does not have funds to meet an immediately due payment.

There is no area of a company in which all of the operations of the company are in as sharp focus as in the money manager's spot. The end result of the collective effort of the rest of the company eventually flows through his accounts. But his is not a passive role. His management of the working capital accounts can vitally affect the health of the company. There is a need on his part to constantly re-examine all of his operating policies. Why are certain inventory levels maintained? Why are certain bank accounts kept or why are certain balances maintained in these accounts? Then, too, why are certain types of investments purchased? Why is borrowing done in a certain way? How are his cash flows channeled? What advantage is gained by discounts given on his receivables or taken on his payables? Are the working capital assets under his control being used to their maximum efficiency consistent with other requirements of safety, availability of funds and the long-term growth of the firm?

The money manager should be a combination of a credit analyst, a commodity specialist, a money market expert, a bit of a horse trader (a trait useful for dealing with security dealers), and a banker. As such he requires a proper balance of art, science, and diplomacy. If he possesses these, together with an ability to read the future, his will be a successful career.

TOWARD THEORIES OF FINANCIAL POLICY

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I. The Skeptical Position

Many teachers of business finance are skeptical about the existence or possibility of theories of financial policy. To support their position, they emphasize both the wide range of influences on financial decisions and their varying importance from one situation to another. The subjectivity of many of the factors makes them dependent upon the psychological makeup of the decision-maker. Furthermore, it is well known that in the analysis of business cases, two or more solutions usually appear equally defensible. Those who hold to the skeptical position therefore assert that there can be no science of business finance since experts cannot arrive at unique answers.

The arguments and illustrations in support of the position that it is not possible to have theories of financial policy are numerous. The foregoing is a small sample of the expressions of the idea. Since the view is so widely held, it is not necessary to elaborate it. To analyze this position, it is necessary, first, to inquire into the nature of theory. Applications to business finance will then be made.

II. The Necessary Ingredients for Theory

The characteristics of theory depend on whether the subject matter is a pure science or a policy science. The explanation may begin with a discussion of the subject matter as a pure science; the necessary modifications for a policy science will then be indicated.

Theory in science may best be described by reference to developments in modern mathematics.[1] The axiomatic method consists of the use of undefined terms and of axioms. Undefined terms are words used to define all other terms that occur in the subject matter. Axioms are primary propositions which are left unproved in the system. Modern mathematics holds that the older concepts, axioms

* I have benefited greatly from discussions with Armen Alchian, Karl Brunner, Reuben Kessel, and Frank E. Norton, Jr. This study was facilitated by the Bureau of Business and Economic Research, University of California, Los Angeles.

1. Raymond L. Wilder, *The Foundations of Mathematics* (New York: John Wiley & Sons, 1952). See especially chap. i, "The Axiomatic Method."

as obvious truths and postulates as reasonable assumptions, beg the question. The two terms, axiom and postulate, are therefore replaced by a single term, axiom, which simply means a proposition that has not been proved.

From undefined terms and axioms, propositions can be developed. Propositions are defined as statements that have truth value or, in other words, as statements whose truth or falsity it may be possible to check. Technically, theorems in a pure theory science are propositions whose logical truth value has been established by deductive methods, i.e., by logical analysis. Thus, the axiomatic method for a pure theory science develops propositions from undefined terms and axioms (i.e., establishes the logical truth or falsity of the propositions by logical analysis) and accepts as theorems those propositions whose logical validity has been proved.

Modifications of this process are essential for a policy science such as business finance, where propositions serve as guides to decision-makers. Propositions must be tested empirically, since they must be able to predict. Although propositions need not necessarily be based on assumptions (axioms) that are reasonable, they must yield implications which constitute prediction in the subject matter of the policy science. It is not necessary to test all implications directly, even when possible, for some of them may be tested by their conformity or consistency with other implications that can be tested directly or verified empirically.[2]

Axioms, i.e., assumptions, are themselves verifiable only in terms of their ability to yield meaningful propositions. Axioms are assumptions made for the purpose of discourse, but if they yield empirically false propositions they must themselves be altered. If, when we check propositions, we find them inconsistent with empirical data (that is, we find them useless for prediction), we may be forced to discard some axioms and replace them with others that will yield propositions enabling us to predict.

Many ambiguous expressions are widely used in connection with theory. Most of them have no precise meaning and can best be defined by reference to the unambiguous terms explained above. A "hypothesis" is an untested proposition. A "theory," "principle," or "generalization" is a proposition that has been tested and has been found to yield successful predictions. Principles, laws, or generalizations may therefore be defined as propositions that are useful guides

2. On this entire discussion, see the profound essay by Milton Friedman, "The Methodology of Positive Economics," *Essays in Positive Economics* (Chicago: University of Chicago Press, 1954).

to action. "Rules" are principles, laws, or generalizations embodied in prescribed codes of behavior.

The question of whether we have theories or principles or generalizations in business finance thus means: do we have propositions that enable us to make predictions? This does not mean that we must have propositions directly verifiable. As an illustration, let us consider two propositions from economic theory: that demand curves are negatively sloped and that supply curves are positively sloped. Disagreements about the statistical or empirical determination of demand and supply curves continue. But, in fact, empirical measures of demand and supply curves are not necessary to test these propositions. We need test them only by their ability to predict in connection with economic policy. For example, if demand curves are negatively sloped and supply curves are positively sloped, we can predict that price control without rationing will create shortages, since controlled prices are set below the equilibrium level. Hence quantities supplied will be less than the quantities demanded. Similarly, price floors on commodities are typically set above equilibrium prices and economic theory predicts surpluses.

When we speak of generalizations, theories, principles, or laws in business finance, we have in mind propositions that explain business financial behavior as an important part of the functioning of the capital markets. In describing and explaining these propositions, we will analyze business finance in connection (1) with microeconomic theory, and (2) with macroeconomic theory. These topics will be discussed in that order in the following two sections.

III. Propositions of Business Finance in Microeconomic Theory

From the standpoint of the theory of the firm, we are here dealing with the capital input function, or the economics of the acquisition of money capital for conducting the firm's operations. It is interesting to compare the antitheoretical positions taken in connection with the price of money capital with those expressed in the literature of labor economics. Some labor economists have said that an increase in wage rates does not necessarily imply a decrease in the quantity of labor hired. This is equivalent to the argument that the demand curve for labor is not necessarily negatively inclined, or to a denial of the marginal productivity principle itself. According to this view, the price of labor is not necessarily the most important factor determining the quantity that will be supplied or the quantity that will be

taken off the market and that generalization may be difficult or even impossible. (The conclusions reached below are, with appropriate modifications, applicable to the field of labor economics.)

Similarly, in connection with the price of money capital, it has been argued that interest rates do not influence investment decisions. In interest rate analysis, however, there is a complication that does not exist in labor theory. Labor is hired and used directly, whereas money capital itself is not so much an input as a means for purchasing other inputs. It may be used for carrying accounts receivable or inventories, that is, working capital, or for purchasing fixed assets. The influence of interest rates on financial decisions has not yet been settled. The empirical evidence has been subjected to analysis that raises considerable doubt of its validity. But this kind of discussion is not crucial to a decision on the existence of theories in business finance.

A more fruitful approach is to look at some of the subsidiary decisions in business finance within the framework of profit maximization. We have, in fact, a sizable body of theory in business finance that expresses income maximization principles taken from economic theory. Certain principles have been developed in connection with decisions on choices between debt and equity financing. This subject has been covered elsewhere and will not be discussed here.[3] Within the framework of microeconomic analysis we may develop our most useful illustrations by referring first to propositions in business finance.

IV. Theories of Financial Policy

The crucial question in deciding whether we can develop a theory of business finance is our ability to formulate propositions. After demonstrating that we do indeed have that ability, I will show that the existence of propositions is consistent with multiple solutions to business finance cases.

Two propositions may be stated with reference to debt policy for the firm. The first is the familiar "trading on the equity" concept. "Trading on the equity magnifies gains and losses." This proposition can be established both deductively and empirically. Related formulations of this proposition are, however, of doubtful validity. One of

3. Franco Modigliani and Morton Zeman, "The Effect of the Availability of Funds, and Terms Thereof, on Business Investment," *Conference on Research in Business Finance* (New York: National Bureau of Economic Research, 1952), pp. 263–308; Friedrich and Vera Lutz, *The Theory of the Investment of the Firm* (Princeton: Princeton University Press, 1951), pp. 193–204; Norman S. Buchanan, *The Economics of Corporate Enterprise* (New York: Henry Holt & Co., 1940), pp. 170–77, 324–27.

them, "The extent of trading on the equity should be a function of the stability of the firm's income," is a rule of action with normative overtones. Restated as a proposition, it would read, "The extent to which a firm gains or loses from trading on the equity is a function of the expected time pattern of its earnings compared with the expected time pattern of the cost of debt." This proposition is difficult to test since it involves expectations of the future. However, where great differences in earnings patterns are likely to occur, differences in the degree of trading on the equity are likely to be found. This is easily verifiable by contrasting the debt/equity ratios among utilities with debt/equity ratios among industrials.

Another proposition in connection with debt policy is the "net monetary debtor or creditor" hypothesis.[4] Assets and liabilities are divided into monetary and real assets and liabilities. Monetary assets are those whose prices are not changed by general price level movements, e.g., cash and accounts receivable. Monetary liabilities are similarly defined as accounts payable and bonds. If total monetary assets exceed total monetary debts, the firm is a net monetary creditor; conversely, it is a net monetary debtor. The net monetary debtor-creditor proposition may be stated as follows: "During inflation, firms that are net monetary debtors gain and those that are net monetary creditors lose; during deflation, firms that are net monetary creditors gain and those that are net monetary debtors lose."

The net monetary debtor-creditor proposition may be viewed in two ways. It may be regarded as a subcase of the more general trading on the equity proposition. Or it may be viewed as an independent proposition centering attention on movements in the general price level, if trading on the equity is formulated under the assumption of stability in the general price level. Alchian and Kessel are in the process of testing the debtor-creditor hypothesis empirically. Their preliminary results are consistent with the proposition.

We have now established the existence of propositions in business finance. Hence we do have theories of financial policy. But is it possible to reconcile theory with multiple solutions to business finance cases?

The answer is found in the essential nature of most business decisions. The variables upon which the decisions are based are questions of fact. But the crucial element is the behavior of these vari-

4. Reuben A. Kessel, "Inflation and Wealth Redistribution," unpublished Ph.D. dissertation, University of Chicago, 1954; also Armen A. Alchian and Reuben A. Kessel, "How Inflation Redistributes Wealth," a paper presented to the Econometric Society Meeting, Winter, 1954.

ables in the future. Business decisions typically involve expectations of the future behavior of variables—they involve uncertainty. This may be illustrated by the typical trading on the equity problem. If projections indicate relatively stable earnings, debt financing is usually advantageous; if future earnings are unstable, the risk of debt may shift the decision to equity financing. But once the expectations of the future behavior of earnings have been expressed, utilization of the trading on the equity proposition will ordinarily indicate the appropriate decision.

Similarly, if management expects a substantial rise in general price levels, it should take a real monetary debtor position in accordance with the net monetary debtor-creditor proposition, and conversely. If management has no strong basis for expecting either a rise or a decline in prices, it may take a neutral net monetary position.

Those teachers of business finance who are still skeptical may feel that these two propositions should not be accorded the status of generalizations, and, further, that they will not be useful as guides to decisions. Persuasion on these points would require more discussion than space permits. I can only ask the skeptic to undertake the following experiment. In presenting business finance problems or cases, let the instructor and the students assume the values of the crucial factual variables into the relevant time horizon. I predict that when this has been done, the group will be in substantial unanimity on the solution. It will be useful if the instructor will then anayze the basis upon which a unanimous decision was reached, given the values of the strategic underlying variables.

In fact, the nature of uncertainty makes it unrealistic to treat the variables other than in terms of a range of possibilities with probabilities attached. Thus a business decision involves at least three distinct elements: (1) formulation of judgments of the probable future values of the crucial variables, (2) the attitudes of decision-makers toward uncertainty and the extent to which safety margins and other protective strategies will be employed, and (3) the application of principles which relate the variables to desired goals. While we may have propositions to guide decisions, the action taken will also require the exercise of judgment and will be influenced by the attitudes of the decision-makers toward uncertainty. The procedure is suggested only for the purpose of indicating the role of theory in business decision-making.

But the crucial test of a proposition is whether it enables us to

predict. Will propositions of the kind thus far illustrated—the trading on the equity proposition and the net monetary debtor or creditor proposition for example—enable us to make predictions? They will not yield predictions about the structure of the balance sheet, which reflects too large a number of variables for this kind of prediction. On the other hand, other predictions may justifiably be expected. For example, regardless of forecasts by the firm's decision-makers as to the future of the price level, we can predict that during a period of rapidly rising prices those firms taking net monetary debtor positions will fare better, both absolutely and relatively, than firms taking net monetary creditor positions. We know further that, regardless of their judgment on the stability of their sales and net income, firms taking a relatively heavy debt position will find their gains and losses magnified by this action.

The following table lists propositions in business finance which may be tested in a manner similar to that described above in connection with the first two propositions.

TABLE 1

PROPOSITIONS IN BUSINESS FINANCE

1. Trading on the equity magnifies gains and losses.
2. During inflation, firms that are net monetary debtors gain and those that are net monetary creditors lose; during deflation, firms that are net monetary creditors gain and those that are net monetary debtors lose.
3. Investors value dividends more than retained earnings.
4. A stable amount of dividends will lead to a higher market value of the firms' stock than fluctuating dividends. If dividends fluctuate, investors will discount the variable dividends with a great uncertainty factor.
5. The test in deciding whether to undertake additional financing is whether or not earnings per share to the old stockholders are increased.
6. The asset structure influences the liability structure.
7. The size of a firm influences its asset structure and liability structure. Size is associated with a larger ratio of fixed assets to total assets, and with a relatively larger ratio of external financing, particularly long-term debt financing, to total sources of funds. Large firms make relatively little use of short-term debt and more use of long-term debt.
8. Profitability influences the asset structure. A more profitable firm is likely to be more liquid, i.e., to have more cash and marketable securities per dollar of sales. Similarly, a more profitable firm has greater access to external financing, although it will probably have less need for it. Such a firm will build up its net worth by retained earnings, and will have a relatively large surplus component of net worth.
9. The age of a firm will influence its asset structure and liability structure. The earnings record of an older firm of relative profitability provides a basis for obtaining external financing, particularly long-term debt.

10. The stage in the life cycle of the firm will influence its financing policies.
11. The relevant data for making business decisions in finance, as well as in other areas, are expected future values. We always deal with the long-run expected values of items rather than simply with current or historical values, although the latter may be our best index or starting point for determining the future behavior of the variables.
12. Since financial decisions are necessarily based on judgments about the future behavior of variables, and since the future can never be forecast with certainty, financial decisions must rest in part on margins of safety, flexibility, and protective strategies to deal with changes in the crucial variables.
13. The composition of the board of directors of a firm is a function of the size of the firm and the character of operations. Small companies need outside influence and prestige, and are therefore likely to use outside directors, especially since their operating problems are less complex and require less knowledge of internal operating procedures. Corporations of public-service character need diversified public representation. The strength of the inside board is expert knowledge of operation. The strength of the outside representatives is their perspective and their more sensitive response to external social and economic developments.
14. The small company tends to be restricted to local sources of capital because they alone are familiar with local economic conditions and with the operations and personalities of the small firm whose success is greatly dependent upon the personalities and competence of its management.

In addition to the kinds of propositions set forth above, I believe that we can rely upon certain principles in solving business finance cases. I have performed the experiment of asking students upon what basis they reached particular decisions in individual business finance cases. Even though their solutions differed, the students based their decisions upon principles. Hence any decision-making places reliance upon some generalizations in business finance. To clarify what I have in mind, I offer the following list of principles derived from discussions of problems in a widely used casebook.

TABLE 2

ILLUSTRATIVE PRINCIPLES OF BUSINESS FINANCE BASED ON DECISIONS IN CASES FROM HUNT AND WILLIAMS, "CASE PROBLEMS IN BUSINESS FINANCE"

1. In a financing program, flexibility for future issues should be allowed.
2. Seasonal peak needs for funds may properly be met by increasing current liabilities.
3. Cyclical increases in the need for funds should be financed from intermediate term sources.
4. As sales expand, working capital needs are likely to expand in excess of cash throw-off. As a consequence of increased sales, the rate of profit on total assets is likely to be less than the rate of increase in total assets.
5. Secular increases in the need for funds should be met from permanent sources, not from sources that have a limited maturity.

6. When secular increases in the need for funds are met from debt sources with definite maturities, the firm has in effect decided to repay by reinvesting its earnings. Hence this is equivalent to a delayed sale of common stock to existing common stockholders, although shares may be sold in the interim.
7. Needs for funds must be estimated from the cash budget, not from the income statement.
8. For receivables to be practical as loan collateral, unit amounts must not be small.
9. Inventory, to be satisfactory as collateral, must have a ready resale market.
10. Since a term loan involves a relatively long commitment by the lender, the borrower must demonstrate stability of earnings and financial strength greater than required in short-term borrowing.
11. Since there is some specialization of functions by lenders, a borrower should select the lender who can best satisfy his financial requirements.
12. The decision to fund or not to fund reserves depends primarily on whether cash is needed to meet the objectives for which the reserve is created. For example, a reserve should be funded to provide for postwar increases in assets, but not for postwar price declines.
13. Current liabilities should generally not be funded, because the primary purpose of incurring the current liability is to provide funds.
14. The decision to fund or not to fund should not be influenced by an existing need for funds for other purposes, or by seasonally fluctuating needs for funds.
15. Funds segregated to fund reserves should be invested on bases consistent with general principles of investment policy.
16. Financial needs and repayment schedules should be budgeted.
17. A change in financial conditions may make refunding desirable; financial managers should be alert to such opportunities.
18. Listing does not necessarily guarantee increased activity in a stock.
19. Preferred stock permits trading on the equity without increasing fixed charges.

Additional evidence in support of the position that we do have generalizations in business finance is provided by the statements we can make about the financing of different kinds of firms. These statements, developed from the factual studies of the National Bureau of Economic Research and corroborated by other researches, enable us to say many things about the financing of individual business firms and the circumstances under which the newer forms of financing can be used. As illustrative therefore of the kinds of background in business finance which enable us to make generalizations, the following material on the relationship between size, age, profitability, and life cycle of the firm is set forth. It constitutes additional evidence of theories in business finance.

The small established firm that has been in operation for some time must rely mainly on equity financing from owners and friends.

If the firm has a long series of profitable years behind it, the surplus account (or surplus that has been converted into common stock) will be relatively large. The firm will make considerable use of trade credit. It is likely to use bank credit to finance seasonal expansions in current asset needs. If the asset structure includes a large amount of fixed assets, the firm will be likely to have a moderate amount of long-term debt, usually secured by a mortgage. If it employs the kind of equipment suitable for equipment financing, it will have long-term debt in that form. But in the main, the small firm is financed largely by equity funds of the owners, by trade credit, and by reliance on short-term bank credit to meet fluctuating seasonal needs.

One can readily see why a small-business financing problem seems always to emerge. A small firm with a favorable growth pattern is likely to find that retained earnings provide inadequate funds to meet its additional needs for working capital and for increased fixed assets. As a consequence the firm tends to rely on trade credit and bank credit to finance what are essentially long-term needs. This policy leads to continual embarrassments and difficulties because the needs for funds extend beyond the term of borrowing. The necessary additional equity financing may not be fully provided through retained earnings and the firm typically lacks access to the long-term capital markets. As a consequence, the successful small business must solve its financing problem by borrowing from relatively wealthy individuals who can make large commitments to such firms.

New small firms are likely to follow the pattern of established small firms except for an even greater reliance upon equity financing obtained from the owners and from close friends. They will have relatively less access to bank funds but, compared to existing firms, they will depend more on trade credit, commercial and industrial bank loans, and mortgages of fixed assets. Government financing aids are most likely to be directed to new small firms whose profitability record is not sufficiently adequate to permit borrowing from banks or individuals.

The financing of larger firms follows a different pattern. The larger firm, relying less on trade credit, will on balance be a creditor rather than a debtor in this respect. It will utilize bank credit to a much smaller extent. It will have a larger ratio of net worth to total assets than the small firm, and a considerable portion of its net worth will be represented by retained earnings. If it is in an industry where the ratio of fixed assets to total assets is relatively large, it is likely to

have some long-term debt in its capital structure. However, the long-term debt will typically be incurred during a period of rapid expansion and will have been paid off in the late upswing and during the downswing. The large firm will utilize preferred stock instead of long-term debt if instability of earnings is so great that the existence of fixed charges would be hazardous.

Another pattern emerges in connection with changes in financing through time. During the upswing the large firm increases indebtedness more rapidly than net worth and, during the subsequent downswing, reduces indebtedness more rapidly than net worth. Small corporations build up net worth relative to indebtedness during economic expansion, but in periods of contraction the losses that may be incurred reduce net worth more rapidly than debt can be repaid. The current ratios of large firms move in a contracyclical fashion, whereas the current ratios of small firms tend to follow the pattern of the business cycle.

The life cycle of a firm appears to have an important influence on its methods of financing.[5] During the early and rapid stages of growth, financing comes mainly from equity sources: from owners and friends for small firms and from stock and bond issues for large firms. As the rate of growth begins to decline, retained earnings become a more significant source of financing. Since the rate of increase in growth has diminished, financing from other sources is less necessary because retained earnings provide a substantial portion of financing needs. When the rate of growth of the firm has virtually ceased, depreciation charges representing the current rate of use of assets are, with retained earnings, virtually sufficient to replace assets. This is logical because, if assets were not growing at all, depreciation charges during a period of stable price levels would be sufficient to finance replacement of assets except for significant quality changes. If growth has continued, but is relatively small, retained earnings plus depreciation will be adequate to finance the needs of the firm. Depreciation will replace existing assets and retained earnings will finance asset increases, which are of moderate proportions under the assumptions.

Without a substantial foundation of theory, we could not develop broad patterns of this kind. We have here a framework for supplying over-all guidance to the practitioner; details can be filled in from local circumstances. We can also offer assistance to the government

5. Cf. G. Herberton Evans, *Conference on Research in Business Finance* (New York: National Bureau of Economic Research, 1952), pp. 32–34.

policy-maker who depends on us to interpret the reactions of business financial policy to interest rate changes and changes in monetary-fiscal policy. We can make some generalizations on the operations of the capital market. But this task has by no means been completed.

V. Business Finance and Macroeconomics

It is in the area of macroeconomics that business finance has its greatest responsibility and has probably accomplished the least. The job that remains is to raise and answer important questions with reference to interrelationships between the aggregate economic magnitudes and business financial policies. A beginning has been made in the recent agenda for research provided by the National Bureau of Economic Research.[6]

Some of the important questions follow. What are the determinants of business savings? Do variations in business savings affect the level of investment? If so, in what ways? How do liquidity and debt/equity positions affect the rate of fixed asset investment by business firms? How are inventory policies influenced by liquidity and debt/equity ratios? How does financial policy influence the spending decisions of firms? What are the relationships between desired investment activity by the firm and the availability of financing? How does availability of financing actually vary with economic fluctuations? To what extent do the attitudes and expectation of suppliers of funds influence the investment decisions of business firms?

These represent the significant questions for exploring the interrelationships between business financial policy and aggregate economic magnitudes. However, this is an area where much remains to be done.

VI. Implicit Theorizing

The skeptics will undoubtedly remain unconvinced by the foregoing demonstrations that useful principles, generalizations, or propositions exist in the field of business finance. I conclude this analysis, therefore, by posing a problem. If we have no generalizations in business finance, what is the content of our textbooks? How can thousands of pages of textbok material be justified if we can offer no generalizations? How can we explain or even describe without theory? For merely to describe requires selection among almost limitless alternatives; to select requires some theory of what is more important,

6. *Research in the Capital and Securities Markets,* National Bureau of Economic Research, 1954.

and what is less important. The content of textbooks could possibly be *descriptive* material, *institutional* material, discussions of *techniques* for organizing information in connection with business finance decisions, *historical* materials, explanations of different kinds of *financing behavior,* and descriptions of the advantages and disadvantages of *alternative types of financing* and *financing policies*. In addition, particular kinds of variables that influence decisions—dividend policy, for example—can be discussed.

This catalogue of contents of business finance books underscores the following truth. Generalizations with regard to particular relationships are inevitably involved whether the books are explaining procedures or presenting the why's of certain financial policies or listing advantages and disadvantages of particular forms of financing or financing policy. To say, for example, that preferred stock has the advantage of enabling trading on the equity without fixed charges implies the generalization that firms whose net income is subject to great variability should avoid incurring fixed charges to any large degree. Similarly, generalizations of many kinds are implied in the descriptive materials in most business finance textbooks.

What disturbs me is not so much the widely held view that we do not have generalizations in business finance as that business finance textbooks contain material which looks very much like generalizations. And when I ask myself how I know whether these generalizations are true, I find (too frequently for comfort when students raise similar questions) that the necessary logical analysis or empirical material to justify the generalizations is not provided. I am disturbed, therefore, not by the absence of generalizations, but by the existence of unsupported generalizations—in short, the implicit theorizing so often found in business finance books.

Important on the agenda for future research is the need to develop systematic procedures for testing the many implicit generalizations found in business finance books. We need to identify the generalizations made on the basis of incomplete support and appropriately to qualify those that cannot be supported by logical analysis or available empirical information.

VII. Summary

The critical test for a proposition or theory is its ability to yield predictions. The assumptions underlying the theory need not conform to observed facts, nor describe actual behavior. Decisions may depend upon innumerable factors of unequal effect and influence

from one situation to another. However, if theories enable prediction and thus provide guidance to decision-makers, they have met the only relevant test of adequacy.

Examples of such propositions in business finance have been set forth. Despite the existence of such theories, multiple solutions to business finance problems have existed and will continue to exist. This obtains mainly because the values of *factual* variables for the future cannot be known with certainty. Because they differ in their judgments of the future values of variables and in their reactions to uncertainty, decision-makers take different courses of action when confronted with "similar circumstances." Nevertheless, the existence in business finance of theories which guide decisions leads to discernible patterns of financial behavior. These patterns have been described and explained in a growing body of factual research studies in business finance.

Despite the wide disavowal of the existence of generalizations in business finance, textbooks contain descriptions of techniques, explanations, and lists of advantages and disadvantages which rest upon a substantial framework of theoretical materials. We should make this theoretical framework more explicit, and should systematically test the implicit theories that abound in our writings and practices.

The great remaining gap in our knowledge lies in the macroeconomic area. Our understanding of the relationships between financial policies, the behavior of capital markets, and the operation of the economic system as a whole is imperfect. The significant questions have not yet been adequately formulated. This remains our main task for the future.

DISCUSSION

PAUL M. VAN ARSDELL:* Professor Dauten has stressed the fundamental interdependence of financial policy and over-all managerial policy while recognizing that development of theory is at best in an embryonic state in both the area of business finance and that of business management. The drift of his statements implies, perhaps as a corollary, that theory of business finance must be integrated with theory of business management.

Professor Dauten would place within the scope of responsibility of both financial and business management the harmonizing of objectives of the firm with those of the economy. With good cause he views this harmonizing as an essential counterpart of a successful free-enterprise system. In this view he recognizes that management needs to share actively in the responsibility for economic stability.

Against a functional background for financial and business management, a reciprocity—or a near identity—is asserted for the theory of business management and the theory of economics, both *micro* and *macro*. Professor Dauten sees economic analysis as the foundation for financial planning and forecasting, and takes the position that explicitly or implicitly "forecasting is the most basic ingredient of any financial decision." If the concept of *forecasting* is sufficiently broad, that position probably is tenable.

This paper would seem to leave no doubt as to whether business finance, even with its managerial overtones, should be a category of economics. The weight accorded economic analysis as the cornerstone—indeed, the ingredient—of a theory of financing is significant and commendable as a first step in the groundwork for development of such theory. Apropos of this emphasis, some of us are especially gratified that long-term and short-term interest rates are cited as of consequence for a theory of finance.

FURTHER CONSIDERATIONS

Among further considerations in a contemplative framework for a theory of business finance, I feel that the following factors warrant careful attention: (1) the relevance of business finance to the fields of business law and accounting; (2) refinement of the basic concepts of the incidents of risk, income, and control; (3) a broadening of approach from cash to capital as the so-called "heart of the

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finance function"; (4) clarification of certain presuppositions regarding the nature of business finance, whether it is an art or a science and whether in developing its theory our objective is scientific validation of propositions or the establishment of general guides to managerial policy.

1. *Relevance to law and accounting.*—As a matter of conceding our indebtedness to associated areas for components of our own body of knowledge, I feel that cognizance must be taken not only of the interrelations between our subject and economics but also of the interrelations between our subject and both business law and accounting, in the development of a structure of financial theory. Recognition of these interrelationships impresses me as an essential condition to establishment of the limitations of our own field. The approach here would be consistent with that taken by numerous ones of our colleagues in accountancy who have worked in recent decades on the development of accounting theory. Moreover, it is often through analysis of the interstitial areas of intellectual inquiry that the seeds of fundamental understanding—and of theory—are uncovered.

2. *The risk, income, and control concepts.*—Forty-two years have passed since Hastings Lyon discussed in his *Capitalization—A Book on Corporation Finance* the incidents of risk, income, and control in corporate capitalization. Bion B. Howard and Miller Upton, with reason, re-emphasized this approach in their recent (1953) *Introduction to Business Finance.* As primary ingredients of business finance theory, these incidents of ownership in my judgment should become the basis of further and penetrating analysis. The concepts have received attention from time to time, often in contingent areas of inquiry, but their refinement and synthesis in modern finance theory is still unfinished business.

3. *Cash versus capital.*—In suggesting *capital* rather than *cash* as the "heart of the finance function" I am not intentionally or seriously quarrelsome with Professor Dauten or others of our associates in this field—including Professors Howard and Upton—who emphasize the cash flow approach. I feel that the capital, or capital flow, approach is appropriately broader not only in terms of financial management but in terms of the fundamental objective of the business firm as a productive, economic unit. As one example only, the capital impairment problem is certainly one of business finance; its solution transcends, from this standpoint, the scope of the cash accounts.

4. *Presuppositions as to nature of business finance.*—There are probably situations wherein distinction between an art and a science seems futile as well as tenuous. Nevertheless, as a fundamental premise for the structure of a theory of business finance, there is a case for establishing at the outset our assumptions as to whether business finance is an applied phase of the social science of economics, and in that sense an art, or whether the inquiry is to proceed on the assumption that business finance in itself constitutes, or may constitute, a science. Similarly, I am convinced that we need to clarify our conception of a *theory* of business finance. In Professor Dauten's paper, I feel the concept is closely linked to that of managerial financial *policy;* in Professor Weston's presentation, I find it identified rather with the scientific validation of propositions. Hence, the question: what do we mean by *theory,* and wherein, if at all, is it to be differentiated from *policy?*

BION B. HOWARD:* Messrs. Weston, Dauten, and Sagen have performed a great service in raising the question of the existence of a theory of business finance, an area that has not been explored in any formal fashion in the past. It is evident from these papers that much fruitful work and exploration can be conducted in this largely untouched field.

Professor Weston in addressing his paper toward theories of financial policy in a sense embraces the whole subject matter of business finance. He raises the question; Do we now have theories of financial policy? and then proceeds through citing examples to show that theories have been developed in various areas. A number of interesting issues are brought up, most of which cannot be touched on in this short comment.

Unfortunately here, as in the general field of economic theory, there are troublesome problems of semantics. In this paper "theory," "principle," "law," and "generalization" are used synonymously. They are defined as propositions that are useful guides to action. This is not the time or place to debate the various shades of meaning that may be or are ascribed to these terms.

One may, however, raise a question about "generalizations" in business finance. I would doubt that there is a "widely held view that we do not have generalizations in business finance." Teachers and practitioners in the field make use of generalizations every day in dis-

* Northwestern University.

cussing the subject, and as this paper points out, the textbooks are replete with them. Anyone who gives the matter serious thought must agree with Professor Weston on this latter point. The issue I would like to raise is: Are all these generalizations theories? I would doubt it. If some are theories and others not, at what stage does a generalization become a theory? Looking over the lists of propositions and principles included as Tables 1 and 2 it is readily apparent that some are of near universal application and others not. Dozens of other generalizations could be cited, many of which have extremely limited usefulness. Can a generalization be a theory when there are more exceptions to it than cases that hold with the generalized statement? Pertinent to this question, of course, is the fact that in most areas of business finance our statistics are so inadequate (or if adequate, untested) that we cannot get very accurate measures of the reliability of the predictability of a proposition.

This paper cites the factual studies of the National Bureau of Economic Research and other researchers which have provided the basis of arriving at generalizations in business finance. There are now over 4,000,000 business firms in the country. Balance sheet and profit and loss data, sources of funds, internal financial statistics and related information (the type of data most useful for developing generalizations) on any significant proportion of existing businesses have not been and still are not available. This means that many of the factual studies of business finance topics have necessarily had to be based on somewhat limited data.

Corporations constitute 15 per cent or less of our business population. Because of their relatively large size, because they have been subjected to differential tax treatment, and generally have been more subject to other forms of regulation, financial information on this segment of the business population has been much more readily available. As a result many of the factual studies have relied solely on corporate data. Generalizations may of course be drawn from these studies, but to carry over these generalizations to the entire business population, as may easily be done by the unwary, can of course be dangerous.

There are numerous "theories" and "generalizations" within the area of balance sheet structure. These necessarily rely on information derived from business balance sheets. Obviously the theories or generalizations so derived can be no better than the underlying statistics. Balance sheet accounts of firms in the same industry may differ

considerably because of the variety of financing techniques and accounting rules and conventions that can be applied to them. Unless these differences are carefully allowed for they may easily give rise to unwarranted generalizations. Only a few need be cited.

In the railroad industry it has been common practice for one railroad to lease another. More recently there has been a trend to the sale-and-lease-back of real property by leading manufacturing and merchandising concerns. The leased property is not shown among the assets and correspondingly the long-term lease liability is not shown on the other side of the balance sheet. The increasing popularity of leasing passenger car and truck fleets and machine tools is similarly treated. Factoring is one of the fastest growing means of receivables financing. The result for users is the elimination of this asset from the balance sheet.

Oil producers may at their option charge off all drilling expenses to current operations or capitalize them with, of course, substantial differences in the appearance of their balance sheets. The trading concern using the last-in, first-out method of inventory costing will show no increase in inventory in a period of rising prices as long as the number of units carried is not increased. Competitors using the first-in, first-out method under the same conditions will show inventory rising in proportion to the rise in the prices paid. The carrying of fixed assets at cost may lead to serious distortion in fixed asset proportions between companies in the same industry, or between industries if there are differences either in rate of, or timing of, acquisitions or rate of depreciation during a period of rapid price change. These and other differential ways of affecting balance sheet accounts must make for caution in formulating generalizations that can be relied on.

Too, as business financial statistics become more readily available, it may well be that we will have to add more and more qualifications to generalizations that have already been formulated. This will detract from their usefulness. An alternative would be the fragmentation of present generalizations to apply to smaller groups of business firms with a corresponding decrease in utility.

This raises a major question. The financing of business is an art rather than a science. Each business is unique. Likewise the subjective and psychological attitudes of the business managers are unique. There is substantial difference between "theory" as representing *general practice* (subject to numerous exceptions), and "theory" in the sense the term is used in science. Is it worth while,

assuming it can be done, to formulate and assemble, as such, a *theory of business finance?*

Professor Weston's paper has ably pointed out major shortcomings in our present body of thought. If an all-inclusive theory of business finance is to be developed, much remains to be done.

CHARLES M. WILLIAMS:* Each of the three papers was on facets of the subject, "Toward a Theory of Finance." Yet how different were their interpretations of what was involved in the subject of the session. The difference in interpretation of their subjects by our speakers is particularly significant because in my view it reflects the very different ideas among practitioners and teachers of finance as to just what is meant by "a theory of finance."

Unlike Mr. Weston, and to a lesser degree, Mr. Dauten, Mr. Sagan did almost nothing in the way of comprehensive generalization or sweeping theory. When he does slide into a generalization, as in his comment, "In any efficiently run management operation there should be an emphasis on transforming accounts receivable into cash," he is on weak grounds. On first thought this generalization seems valid and useful. Yet, is it not true that the purely financial implications of this statement are only part of the story from an overall management point of view? Particular managements may well find it desirable to make a strong financial position an offensive, competitive weapon and act to increase their profits and sales by deliberately extending more generous trade credit. In the textile industry, for example, in recent months a number of companies have competed for sales by lengthening sales terms. Were these companies inefficiently managed when they de-emphasized fast collection of receivables?

It is difficult indeed to separate out financial considerations from broader management considerations. Almost all of the operations of the business affect the financial situation and vice versa. Actually, in a number of places the three papers reflect recognition of this fact, and I find this recognition heartening indeed.

Mr. Sagan strongly emphasizes the importance of cash flow planning in the work of the financial manager. I heartily indorse this emphasis. The importance of cash flow planning is so readily demonstrable as to appear almost obvious. Yet, in the literature of the subject as recently as 10 years ago, and until recently in our college courses in finance, it received little attention.

* Harvard University.

Now that the importance of cash flow planning has gained general recognition, it seems to me that as students of finance we should be interested in the question, "Why don't more businessmen actually undertake effective cash planning?" It is my experience that a great many companies who could benefit much from careful cash planning are still in the back-of-an-envelope stage in their actual cash planning. I see several major barriers to the extension of effective cash programming in business generally. Doubtless you can see others.

1. As our speakers have suggested, effective cash planning must come after, not before, effective general planning for the company, since all phases of operation affect the cash position. Is not the treasurer who needs to do careful cash planning but cannot get his associates in manufacturing, procurement, etc., to commit themselves to plans in a poor position to do effective cash planning?

2. Then there is the unchallengeable fact that the operations of many companies are subject to erratic and sharp changes that are hard to forecast. It is easy to sympathize with the point of view of the financial manager who has made a careful cash budget and then had the assumed conditions change radically when he concludes, "This budget was no damned good in our situation." Yet paradoxically the need for formal planning is greatest in the companies characterized by rapid change. Conversely, static situations where the planning can be done more confidently inherently require less organized effort at foresight.

3. Once the cash budget is drawn up, there remains a major job of evaluating the reliability of the data. This includes appraisal of the margins of error and an analysis of elements affecting cash needs which are controllable and those that are not. It is vital to recognize that the cash budget is not a tool that can be used mechanically and without judgment.

In underscoring Mr. Sagan's basic point of view that cash flow planning is potentially of great usefulness, I would go further and predict its extension in a variety of areas. For example, I'd bet that in the not too distant future we will see cash budgets as much a basic part of the progressive commercial bank's credit file in many types of loans as the profit and loss and balance sheets of today.

It is also interesting to note that Mr. Sagan, perhaps more than Professors Weston and Dauten, keeps a consistent point of view throughout his paper—in his case, *the point of view of a manager in the firm*. The point of view toward theory in finance of a business

manager in a firm, of the economic theorist viewing the over-all financial scene, and the public official looking at financial problems broadly from a public policy point of view are necessarily different. If point of view is not clearly identified in our writings and discussion of theory, it can only lead to confusion.

In conclusion, I would like to make the observation that as teachers of finance in general we have made real progress in recent years in moving from an emphasis on the "what" of finance into a more meaningful and useful concern with the "why" and "how best to" of finance. I am convinced that a continuation of this shift in emphasis will lend increasing usefulness to our college courses in finance.

THE QUESTION OF CURRENCY CONVERTIBILITY

CONVERTIBILITY—THE CURRENT APPROACH*

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I

IN APPROACHING THIS SUBJECT, it became evident that much of the material on convertibility has been brought out, displayed, and analyzed in the course of past two years. The subject has been extensively discussed in public papers, in the financial press and among professional economists. The approach to it is made, therefore, after a fashion which may be appropriate in the city in which we are holding this meeting. It is, I believe, customary at this season of the year to call attention, in discussing automobiles, to the distinguishing features of the new models. I shall try to follow this procedure to some extent, and to orient my comments about some aspects of the current model of convertibility as distinguished from the models of earlier years. These comments represent only the thoughts and opinions of the author and do not in any way constitute a statement of opinion by the Treasury Department.

There is an important distinction between our situation and that of the new models of automobiles which you will all recognize. This is that the convertibility model has not been put upon the market.

An approach such as this means passing rather rapidly over several aspects of convertibility, without attempting to sketch in the basic characteristics of the system or to discuss its merits or demerits. These are the points which will be mentioned.

1. Convertibility is now discussed as a gradual and evolutionary process.

2. Convertibility must rest on a satisfactory international competitive position, and the close relationship of internal inflation to the international competitive position is being re-emphasized.

* This paper by George H. Willis and the following two papers by Donald F. Heatherington and Howard S. Ellis, with discussions by Raymond F. Mikesell and Frank A. Southard, Jr., were presented at a meeting of the American Finance Association in Detroit on Wednesday, December 29, 1954. The program was under the chairmanship of Norris O. Johnson, The National City Bank of New York.

3. Intermediate forms of payments systems, between bilateralism and convertibility, are in effect and constantly evolving, and some progress is being made in relaxing discriminatory dollar restrictions.

4. Techniques for dealing with abrupt payments deficits are being re-examined.

5. Possible discrimination by inconvertible areas presents a problem to areas considering convertibility.

6. The competitive position of Western Europe vis-à-vis the United States has been good in recent years.

7. Judgments as to the outlook for the competitive position of the rest of the world vis-à-vis the United States strongly influence attitudes toward convertibility.

Some of these points represent a return to fashion of economic concepts that are by no means new and will require very little comment. On others some observations will be made, drawn from consideration during the past two years. Finally, an attempt will be made to look at our own balance of payments, to see whether any light can be thrown on our competitive position.

It should be mentioned that in this brief discussion the whole question of trade and tariff policies of a long-range character is avoided, though trade restrictions as a technique for short-term balance of payments adjustment are mentioned. This is done because the subject is too large for treatment in this short paper, though its importance is fully recognized.

II

Perhaps the most striking characteristic of recent discussions of convertibility in official papers and in topical journals is the general acceptance of an evolutionary rather than "deadline" approach to convertibility. It is still felt that there is a Rubicon to be crossed at some stage—a particular step more decisive than the others which precede and follow it. But, in contrast to the 1947 approach, for example, that decisive step is not fixed in time but is recognized to be dependent upon a judgment by the responsible government in the light of its estimate of the economic weather ahead.

This means in effect that the current approach does not visualize an abrupt adjustment of payments patterns through whatever public policies might prove necessary to attain rapidly the pattern suited to a convertible currency. It recognizes the institutional and other stresses to which a modern economy is subjected by a sudden and

decided change of course. What it does emphasize is the importance of the direction in which the course is being changed by successive moderate turns on the steering wheel. Is the course shifting so as to lead to convertibility or away from it? It says, in effect, that we must work on policies which will steadily shape the internal economy and the external payments in the right direction.

Internally, a country moving toward convertibility will normally need public policies which tend to maintain its international reserves reasonably stable at an adequate level. Or, in other words, it will need policies which make it competitive internationally. Convertibility itself is a part of a broad philosophy which emphasizes freedom for competition to develop efficiency under private enterprise. Hence, a movement toward convertibility aims at a competitive economy without price and wage controls, rationing and allocations. Most important in achieving this is a budgetary policy and a quantity of money and credit which is not inflationary, relative to other major trading nations.

The sensitivity of an international competitive position to internal policies probably varies from country to country. But one of the lessons which has been redemonstrated in recent years is the ability of inflation to create a balance-of-payments problem in a short time. The converse has also appeared—that payments problems which seemed unmanageable when there was inflation seem to become rather domesticated and tractable when inflation disappears.

The loss of competitive position resulting from inflation has frequently been temporarily masked in our days by rationing, allocation, exchange controls, and quotas. With quotas and exchange controls especially, the spending power which might have been spent on the restricted foreign goods may be diverted to substitutes produced internally, and labor and materials are drawn into these protected industries. The cost of inefficient use of resources may not be really avoided, and controls may be partially effective only in so far as they increase savings, avoid cost increases, and attack inflation indirectly.

A great deal more could be said about the relation of inflation to a country's international position. But our purpose in mentioning it is not to analyze the question or attempt a thorough discussion. Rather it is merely to express a belief that in the past few years the recognition that dealing with inflation internally improves the balance of payments has been spreading and has been exercising greater influence in public policies.

III

Externally, as well as internally, evolution toward convertibility means more reliance on straightforward competitive ability. It means the relaxation of discriminatory exchange controls and quotas. It does not mean and is not at all the same thing as free trade. It means that, within the long-range policy of a country as to general restrictions on imports, there will be growing freedom to spend money either in or outside the country, moving through any foreign currency.

Since the end of the war there has been uneven but continuing progress away from bilateralism and internal and external controls toward more liberal trading and exchange systems. This is still going on, and during the past year or two we have seen a steady succession of exchange and trade relaxations.

The analogy has been made to me that this effort to move toward convertibility has been like rolling a heavy stone uphill. The implication of this analogy is that if you do not succeed in reaching the top of the hill you must continue to sweat and strain to keep the stone from rolling back down. If on the other hand you get it over the top of the hill then you can relax and watch gravity take care of the problem and bring the stone to its final resting place.

This analogy seems too strong in several respects. There may be rather uneven slopes on both sides of the mountain with ledges and plateaus and even cliffs that are hard to scale or descend. Perhaps we are at the moment on one of those comparatively level stretches not too far from the summit.

Nevertheless, there is a great deal in this analogy in that there is some point at which the momentum of forces tends to push toward convertibility rather than toward the opposite extreme of bilateralism. I am not at all sure where that point is, but I think it probably exists.

As the world payments pattern evolves toward convertibility and transactions are made more freely, this freeing up can take place, broadly, by areas or by commodities, or by some combination of these two categories.

Proceeding geographically, one possibility is to give full convertibility privileges to the balances that accrue to foreigners, or to certain specified foreigners. Taken by itself, this is sometimes discussed as "financial" convertibility for non-residents. If accompanied by removal of discriminatory trade restrictions, it would represent full convertibility for non-residents for current transac-

tions. Convertibility for residents of the currency area could then become a second stage in the evolution toward full convertibility on current account, and freedom for capital movements by residents the final stage of evolution.

"Financial" convertibility for non-residents would seem likely in itself to have some consequences in relaxing discriminatory restrictions among the non-resident areas, which would in effect be able if they desired to convert their balances so as to buy freely in the cheapest market. It would not, however, have the same effect on the residents of the currency area itself, at least directly. Freeing up of foreign balances under "financial" convertibility would also make it easier for other countries to move toward convertibility for their own currencies.

Another aspect of evolution in the geographical sense is the possibility of broadening regional trade liberalization schemes such as the OEEC program to eliminate discrimination against outside suppliers by extending to such outside suppliers all or part of the liberalization privileges now granted within the OEEC group of countries.

Liberalization of dollar imports (or elimination of discrimination against dollar imports) represents a sort of partial convertibility defined on a commodity rather than geographical basis. The United Kingdom has during the past year been taking significant steps in this direction and, in the case of other countries, this form of partial convertibility may be both feasible and important. With respect to the commodities affected it subjects both domestic and foreign producers for that market to a more rigorous test of their competitive position. The gradual addition of more and more commodities to this liberalized and non-discriminatory import regime can eventually lead to a pattern of trade and competition identical with that to be expected under convertibility. At the same time, however, it should be noted that the rate of progress being made by this method toward convertibility is always difficult to measure or define clearly, and that the method may not give to any group of traders as much freedom from controls as foreigners receive when their countries are placed in the convertible category, under a geographical approach.

IV

Ideally, it would be a happy situation if we did not have to face abrupt deficits of substantial magnitude in the balance of payments. In practice they may occur, and plans for convertibility may include

a method of dealing with them. A rough classification might divide such deficits into three types. First, there is the movement of capital or "hot money" which may take place because of anticipation of exchange depreciation, or changes in fiscal policies, or an expectation of heightened international tension. Second, is the development of a bear position in a currency even where capital movements are restricted, through leakages from the exchange control and the ability of exporters to defer repatriation of proceeds while importers expedite their foreign payments. The third type, which is likely to be accentuated by the first or second type of payments shift mentioned above, may result from a rather decided fall in export proceeds or a sharp increase in imports.

To deal with these situations, a variety of techniques has been applied from time to time. The principal components of these techniques are exchange controls on capital movements, use of reserves, borrowing abroad, import taxes or surcharges, application of quantitative restrictions, a flexible exchange rate, or depreciation of the currency to a new fixed level. If the situation is the reverse, and there is an abrupt increase in export surplus and in exchange receipts, restrictions on imports can be relaxed.

With respect to capital movements, it has long been recognized that a good theoretical case can be made for convertibility on current account and a retention of restrictions on capital movements. In actual practice, there has not been much recent experience with such a form of convertibility. Most of the convertible currencies do not distinguish between current account transactions and capital transactions and do not retain exchange controls merely for the purpose of preventing capital exports. In fact, in some cases where commercial transactions are subject to exchange and trade controls, there exist free exchange markets in which capital transactions and invisible current transfers may be carried out at a flexible rate.

One of the questions is whether the new convertibility should rely upon application of non-discriminatory quantitative restrictions or exchange rate adjustment to deal with abrupt and serious balance-of-payments problems, where these cannot be met by drawing on reserves or by foreign borrowing. It is, of course, recognized that neither of these techniques will deal effectively with a continuing deterioration in the international competitive position resulting from internal inflation, though they may to a certain extent at least keep pace with such a development.

It is worth noting, however, that the use of restrictions can only

adjust the balance of payments on the import side and does not operate to stimulate exports in the same way as an exchange depreciation may do under appropriate conditions. One consequence or evidence of this is that quotas and exchange restrictions are frequently associated with export subsidies.

Rather than argue the respective merits of these approaches perhaps it will suffice here to note that, with perhaps more recognition of problems of flexibility in internal policies, there appears to be some tendency to look with slightly less distrust on the flexible rate approach. At least there is some tendency to agree that countries may consider this alternative as one possibility in dealing with their problems if they so desire. Canada, for example, has been operating a flexible rate and convertible currency for some time. The problem of safeguards against exchange adjustments which seriously disturb other economies is a serious one, however.

One may perhaps suggest that the technique best suited to a particular country and situation may not be the same as that which is best for another country at a different time. It may also be suggested that one of the major elements in determining the best course is to attempt to decide which form of adjustment will go furthest toward restoring confidence and avoiding the prolongation of inflation.

In the case of both exchange adjustments and the application of controls and restrictions, there is considerable uneasiness on the part of each country regarding the effect upon it of action taken by other countries. Hence, there is emphasis on some safeguard through international consultation on exchange policy and on policy with respect to trade and exchange restrictions. Principal organs for such consultation are the International Monetary Fund and the GATT on a world-wide basis. In more limited regional arrangements, such as the OEEC, there has been extensive consultation on exchange and trade restrictions and even on questions of short-term borrowing.

V

Discrimination and bilateralism among inconvertible currencies, which threaten to result in net surpluses rather than balanced accounts with convertible currencies, constitute a major worry of countries which contemplate or approach convertibility. They fear that their reserves will be drained off by inconvertible countries which practice discrimination against them, and that they will lose export trade volume.

This fear leads to two major consequences. The first is that each country which joins in a convertibility move makes the move easier for others, since convertibility should mean giving up discriminatory trade techniques. The second consequence is that assurances are sought and international consultation is urged to place limits on the freedom of inconvertible currency areas to discriminate against the convertible currencies and/or negotiate mutually preferential bilateral trade agreements.

The study of these problems has occupied much of the time and efforts of the IMF, the OEEC, and GATT in the past year. This is, however, a subject in itself, and these forums have developed practically a whole technical language of their own. This paper will not try to go further into these questions.

VI

Turning from these technical and negotiating problems of the evolutionary approach to convertibility, it may be suggested that underlying many views as to the speed and manner of approach are judgments as to the competitive position of other countries, and particularly of the sterling area and of Europe, vis-à-vis the United States, now and in the future. In an effort to throw some light on this question, a review has been made of some of the significant magnitudes in our own international position. This is too statistical and too detailed to give here, but will be made available as a brief appendix to this paper.

This review surveys the figures for postwar years and compares them with those of earlier dates for three magnitudes: (*a*) the net foreign investment or disinvestment of the United States, (*b*) the net reserve position of the United States, and (*c*) a category termed, for convenience, the "competitive balance" of the United States, which attempts to measure the net pull of our non-governmentally financed current accounts on the free dollars available to the rest of the world.

The conclusions are, first, that the United States, in the strictest balance of payments sense, has been a debtor rather than a creditor since 1949. Our large governmental outpayments have exceeded our net deliveries of goods and services. Our net foreign disinvestment has amounted to about $5 billion since 1949. This, however, is in the balance of payments sense alone and does not take account of some of the reinvested earnings of United States enterprises abroad.

Secondly, the net reserve position of the United States, as measured by the total of our gold holdings less official foreign dollar balances, has been reduced by more than $6 billion since 1949 to a current level of about $15.3 billion. This decline is slightly more than the total net disinvestment and more than accounts for it. This movement corresponds to a part of the increase of more than $9 billion in foreign reserves of gold and dollars during the period, the remainder being due to gold production and other factors. Our net reserves are continuing to go down, as in effect a substantial part of our military expenditures abroad in free dollars are added to foreign reserves.

Thirdly, the "competitive balance" or the pull on foreign free dollars through our net non-governmental accounts, has shown a small surplus in every year since 1950, when a large deficit was recorded. This surplus has in no year since 1949 exceeded the rate of new gold production abroad, and in 1953 almost disappeared. In 1954, however, it appears to be somewhat larger than in the years 1949–53.

Finally, the geographical pattern of accounts of the United States, in terms of the "competitive balance," shows a deficit with Western Europe and its dependencies, and also with the sterling area. The surpluses have been concentrated in our accounts with Canada and with the Asiatic area.

This accords with other indications of a strong competitive position for Western Europe at the current level of U.S. military expenditures and with the current level of restrictions. The question that is posed, and on which opinions may differ, is the following: What portions of free dollar receipts from military expenditures, gold production, and other sources should Western Europe continue to store up in reserves rather than relaxing dollar restrictions and considering further steps toward convertibility and away from bilateralism?

VII

To review briefly the comments made thus far we have suggested that the current approach to convertibility is evolutionary rather than "deadline." We have said that the strong effect of internal inflation on the international competitive position, and on prospects for convertibility, is increasingly recognized, and that internal monetary and fiscal policy has received more careful attention in many countries in recent years.

Then we commented briefly on the problems of evolution of the structure of world payments, now containing areas ranging from

bilateralism on one side to full convertibility on the other. We ventured the opinion that further progress toward convertibility might gather momentum as it moved. A geographical, a commodity or a combined technique are alternative ways of becoming more nearly convertible. There will be continuing technical and negotiating problems for convertible and inconvertible currency areas in dealing with their future balance-of-payments problems.

Considerable progress has been made in 1953 and 1954. Judgments as to how much progress will or should be made in the future will be influenced by personal opinions on the competitive strength of Europe and other areas vis-à-vis the United States. In this paper and the Appendix, an attempt has been made to segregate some of the data from our international accounts and related statistics which throw some light on the question, and which can be kept up to date as time passes. These data do not present a discouraging picture as to the possibilities for further progress toward convertibility.

They do suggest the significance of decisions, particularly by some countries accumulating reserves, as to liberalization of trade and payments vs. continued reserve accretions. They indicate the significance for some countries of our current military cash disbursements, at an annual rate of $2.5 billion a year in the first nine months of 1954, in providing free dollars, even though for the world as a whole new gold production alone would have provided a net amount of free dollars about equal to the net pull on free dollars by U.S. non-governmental current transactions in 1954. The question is posed as to how much of dollar receipts from such military sources should be added to reserves and how much be risked in relaxing restrictions.

As to the level of reserves, it is calculated that for Western Europe and its dependencies, gold and dollar reserves as of June, 1954, represented about 275 per cent of annual expenditures of the area in the United States for goods and services. In 1928 the corresponding figure was about 250 per cent. During the thirties, when world trade was at a low ebb, and reserves had been expanded by depreciation, ratios that were higher, and probably abnormally high, were reported.

Opinions will differ as to what extent the current levels of restrictions and bilateral agreements cut down demand for dollar goods abroad. The experience of 1954, as measured by our figures, does indicate some increase in U.S. competition for free dollars in 1954 as against 1953, though part of the statistical result is due

to a fall in our imports. How much of the net change is due to relaxation of dollar restrictions abroad is difficult to say, but dollar relaxation thus far does not seem to have disturbed European balances of payments significantly, while it has probably had a positive effect in lowering costs and increasing competitive ability.

Will we go farther in 1955 or will we rest at the present point? It may be hoped that further progress can be made. Beyond that, in these days of uncertainty, one would hesitate to go.

APPENDIX

It is well known that since 1949 foreign countries have added substantially—about $9 billion—to their gold and dollar reserves and that this indicates a stronger competitive position, particularly in Europe. We know that this improvement has taken place even though there have been considerable relaxations in restrictions on dollar imports. We constantly hear from our own exporters evidence of increasing competition in moving capital goods. As nearly as we can ascertain we have not lost significantly in our relative share of those sensitive markets such as Canada and the Caribbean area in which we compete freely.

It is not easy to assess our competitive position because our own data are complicated by military aid, by economic aid, and by United States military expenditures abroad. Nevertheless there are some significant things to be said from an examination of our own balance of payments. In this review we deal with our balance of payments with foreign countries, excluding capital transactions with international agencies.

In the first place, let us take our surplus on current account and deduct from it that part which has in effect been financed by net private remittances and by net exports of United States private capital. Let us also remove our military and items from both sides of our accounts and eliminate our military cash expenditures abroad from the current account. If we do this we will arrive at a figure which represents the goods and services that we have delivered abroad which were in effect paid for here by United States aid in the form of loans and grants for economic purposes, or by drawing on foreign dollar reserves.

This figure fell from $10.6 billion in 1947 to an annual rate of $2.3 billion in 1953 and the first half of 1954. There was a heavy demand for dollar goods in 1947 and we recall that in that year foreign countries (exclusive of international institutions) drew on

their reserves by about $4.4 billion in addition to public loans and grants of nearly $6 billion which we made available.

Using this very rough measure we find that in 1949 the figure of $10.6 billion had been nearly halved, and reserves were no longer being drawn upon to supplement United States aid. American aid was being used up but foreign countries did not want to spend dollars so badly that they dipped into their own reserves. At that stage one might suspect that our export surplus was becoming somewhat dependent upon aid and might very well have been substantially smaller if we had not extended aid. However, countries were spending all the dollars they received.

Beginning with 1950 we have a very clear indication of the growing improvement in the competitive position of foreign countries. With the increase of military expenditures in our balance of payments, foreign countries received free dollars, in addition to those which were programmed for dollar exports under aid programs. We have not in any year since 1950 earned back all these free dollars, and in 1953 a sum almost equal to our total military cash expenditures was added to foreign reserves from transactions with the United States.

In a further attempt to look into the postwar development of our balance of payments, it has seemed useful to utilize three separate and distinct concepts. The first of these is the well-known and readily available figure which represents the net foreign investment of the United States or net disinvestment by the United States. This really represents our over-all creditor or debtor position as reflected in the United States balance of payments, after taking into account our current accounts and our unilateral transfers on public and private account. The second concept which is useful is what may be called the net as distinct from the gross reserve position of the United States. To arrive at this we deduct from our gold reserves the official short-term dollar balances of foreign countries. This magnitude shows the fluctuations in our international liquidity position.

The third concept is the extent to which the United States through its non-governmental transactions has been drawing in free dollars from the rest of the world, or was paying out free dollars to the rest of the world. For want of a better term, this might be called the "competitive balance."

I would like to review briefly some of the indications that can be drawn from these three magnitudes.

A. Net Foreign Investment or Disinvestment

A glance at a summary table of our balance of payments will show that our investments steadily increased throughout the period of the twenties when we were making private investments abroad. We were a creditor nation with a surplus financed by private foreign investment. During the thirties there were positive annual figures in most years with the largest creditor position in the years 1938 and 1939. As you know, this was also a period of capital inflow into the United States on private account, and the over-all balance in our accounts was found in our large purchases of gold.

During the war years we drew on our foreign investments to a moderate extent to finance our foreign expenditures.

Since the war, however, there has been a rather uneven movement in our net creditor or debtor position. In 1946 and 1947 we made very large loans and had a very large creditor balance of more than $13 billion in those two years. With the introduction of large-scale grants, our net creditor position became a small one. In three years since 1949 we have been a substantial debtor, in the sense that we have in effect used up some of our foreign assets or become indebted to foreigners to pay for current expenditures. This occurred in 1950 in the amount of over $2 billion and again in 1953 in an amount close to $2 billion. This year our debtor position is running at an annual rate of $1 billion. In the strictest balance of payments sense of the term, therefore, we have not been a creditor nation but a debtor nation recently.

B. The Liquid Reserve Position of the United States

A second magnitude which is of interest in following our postwar accounts is the net reserve position of the United States. We are all familiar with our regular series of gross gold holdings, and we are also all aware that the short-term dollar assets of foreigners have been increasing.

Those short-term dollar claims on the United States consist of three major categories: official balances, balances of international institutions, and private holdings. All three together now add up to about $12.5 billion.

However, for our purpose we have used the figure which is derived by subtracting from our gold reserves the official dollar balances of foreign countries. This difference was about $14.1 billion at the end of 1938 and stood at $17.7 billion at the end of 1946. It rose to $21.7 billion at the end of 1949 and then declined to a total of

$15.3 billion in October, 1954. In other words, since the end of 1949, our liquid position has been going down as more free dollars became available to other countries. The total reduction in 4¾ years has been about $6.3 billion.

Parenthetically, it may be noted that the short-term dollar reserves of international institutions have hovered around $1.6 to $1.7 billion since 1949. During the same interval private short-term dollar claims have risen from just over $3 billion to about $4.4 billion.

C. The "Competitive Balance" in the United States Balance of Payments

There has been a great deal of discussion about our balanced or deficit position and about the increase of foreign reserves in recent years. It is sometimes said that this is primarily due to our military disbursements in cash dollars in foreign countries and that it may represent a passing phase. In an effort to try to evaluate a little more closely the power of our economy to attract free dollars from the rest of the world, we have experimented with a figure which is derived as follows.

From the current and unilateral accounts we have taken out military end item deliveries, military aid, and current cash military expenditures abroad. Then we have eliminated an amount equivalent to private remittances and exports of United States private capital. This gives an intermediate result which has already been discussed above, and represents in effect the amount of goods and services which we have delivered to other countries that were paid for by government loans or government non-military grants, or by the use of reserves or other free dollars (such as dollars accruing from military expenditures of the United States). A final step is to reduce this figure by deducting an amount equivalent to net economic aid in the form of government loans and grants. This final result is a rough approximation to the amount of free dollars drawn from the rest of the world or paid to the rest of the world on non-governmental account.

This experimental concept, which may be called the "competitive balance," helps to focus on the factors interesting to us in connection with convertibility. For example, if we were to have an increase in private investment without a corresponding increase in physical exports, our "competitive balance" would be reduced. On the other hand, if our military expenditures abroad were to be reduced with-

out any corresponding change in the commercial movement of goods and services, there would be no effect on the "competitive balance" as we have defined it. It is independent of the rate of our military disbursements abroad.

This balance in 1928 was a deficit of nearly 500 million. In 1929 we were close to zero. In 1937 we had a surplus of nearly $400 million and a surplus of nearly $1,200 million in 1938.

In the postwar period very large surpluses resulted in 1946 and in 1947. The record of the other years is interesting enough to give the actual figures as shown in Table 1.

TABLE 1

Year	$ millions
1948	+ 836
1949	− 28
1950	−3,022
1951	+ 438
1952	+ 340
1953	+ 90
1954 (annual rate, based on first 9 months)	+ 600

From these figures it will be seen that in the year 1953 the United States through its private transactions was not exerting any significant pull on the free dollars of the rest of the world. It appeared to be in competitive balance, without any allowance for the large military disbursements which were being made on government account and which were in effect almost entirely available to add to foreign reserves in that year. This year there has been some additional competition from United States exporters and some falling off in United States commercial imports. The result is that the United States is pulling in some of the dollars which it is paying out on governmental account, but only a part. A very large part of these military disbursements was still available to add to foreign reserves.

D. The Geographical Composition of Our "Competitive Balance"

A few words might usefully be said on the current geographical composition of our accounts as we have measured them by the concept of "competitive balance."

With Western Europe and its dependencies we had a large "competitive deficit" of about $900 million in 1953. This was offset by substantial surpluses with Canada and with the Eastern Hemisphere,

outside of Western Europe and its dependencies. With Latin America we were running a small deficit.

In effect, in 1953, Europe, on non-governmental account, was drawing free dollars from the United States and we were drawing free dollars from Canada and the Asiatic area.[1] In the case of Canada we were receiving dollars paid in to Canada by both Europe and Asia. Our surplus with Asia was more than offset by dollars accruing to this area from our military expenditures.

TABLE 2

CHANGES IN UNITED STATES NET RESERVES

(In millions of dollars; end-year except as noted)

	1	2	3	4	5	6	7	8	9
			U.S. Net Reserves			U.S. Net Reserves Less Int'l Inst. Dollars		Foreign Countries Private Short-Term Dollars	
Year	U.S. Gold Stock	Foreign Countries Official Short-Term Dollars	End of Year (1–2)	Change from Preceding Year	International Institutions Short-Term Dollars	End of Year (3–5)	Change from Preceding Year	End of Year	Change from Preceding Year
1927	4,092*	n.a.	n.a.	n.a.	.....	n.a.	n.a.	n.a.	n.a.
1928	3,854*	437†	3,417	− 238‡	.....	3,417	− 238‡	2,089†	n.a.
1929	3,997*	581	3,416	− 1	.....	3,416	− 1	2,092	+ 3
1936	11,423	232	11,191	§	.....	11,191	§	1,391	§
1937	12,790	427	12,363	+1,172	.....	12,363	+1,172	1,466	+ 75
1938	14,592	474	14,118	+1,755	.....	14,118	+1,755	1,684	+218
1945	20,083	4,370	15,713	§	.....	15,713	§	2,704	§
1946	20,706	3,044	17,662	+1,949	474	17,188	+1,475	2,963	+259
1947	22,868	1,851	21,017	+3,355	2,337	18,680	+1,492	3,022	+ 59
1948	24,399	2,874	21,525	+ 508	1,939	19,586	+ 906	3,018	− 4
1949	24,563	2,913	21,650	+ 125	1,658	19,992	+ 406	3,052	+ 34
1950	22,820	4,130	18,690	−2,960	1,595	17,095	−2,897	3,497	+445
1951	22,873	3,548	19,325	+ 635	1,641	17,684	+ 589	4,113	+616
1952	23,252	4,830	18,422	− 903	1,594	16,828	− 856	4,307	+194
1953	22,091	5,793	16,298	−2,124	1,630	14,668	−2,160	4,355	+ 48
1954 (Oct.)	21,827	6,519	15,308	− 990	1,774	13,534	−1,134	4,352	− 3

n.a.—Not available.

* At $20.67 per fine ounce.

† May 1929.

‡ Change in gold stock only.

§ No comparison made.

The outstanding feature is the strong position of Western Europe and its dependencies. In the first three quarters of 1954, we were running a smaller "competitive deficit" with Western Europe at an annual rate of about $225 million. While this was not as strong a showing for Europe as in 1953, it still provided a significant amount of dollars to meet expenditures outside the United States and permitted amounts roughly equal to our dollar disbursements in these areas on military account to continue to be added to European reserves.

1. Actually some areas not strictly Asiatic are included in this category.

TABLE 3

ALTERNATIVE MEASURES OF U.S. PAYMENTS SURPLUS OR DEFICIT WITH FOREIGN COUNTRIES*
SELECTED PERIODS 1926–54

(In millions of dollars)

Annual	U.S. Competitive Balance†	Net Foreign Investment‡	Change in U.S. Net Reserves§
1926	— 382	445	93‖
1927	— 574	716	— 113‖
1928	— 480	1,012	— 238‖
1929	— 27	771	— 1#
1930	212	690	394
1926–30	−1,251	3,634	194‖
1931	974	197	8
1932	679	169	348
1933	137	150	— 138
1934	710	429	4,211**
1935	486	— 54	1,830
1936	139	— 93	1,195
1937	383	62	1,172
1931–37	3,508	860	8,553††
1946	2,215	4,836	1,949
1947	4,746	8,942	3,355
1948	836	1,956	508
1949	— 28	533	125
1946–49	7,769	16,267	5,937
1950	−3,022	−2,201	−2,960
1951	438	227	635
1952	340	— 164	— 903
1953	90	−1,866	−2,124
1950–53	−2,154	−4,004	−5,352
1954	600‡‡	— 937‡	−1,010§§
Quarterly			
1953			
1st qtr.	— 180	— 526	— 719
2nd qtr.	49	— 581	— 463
3rd qtr.	— 233	— 675	— 598
4th qtr.	454	— 84	— 344
1954			
1st qtr.	170	— 306	— 337
2nd qtr.	273	14	— 375
3rd qtr.	7	— 411	— 170
Oct., Nov.	n.a.	n.a.	— 128

n.a.—Not available.

* Excluding capital transactions with international institutions.

† Net foreign investment excluding military expenditures abroad less net United States capital outflow.

‡ Balance on goods and services and unilateral transfers.

§ United States gold stock less foreign countries' official short-term dollar holdings. Gold stock valued at $20.67 per fine ounce through 1933 and at $35 per fine ounce thereafter.

‖ Change in gold stock only. # Change from end of May 1929.

** Reflects revaluation of gold. Does not include change in certain Philippine accounts held with the U.S. Treasury.

†† Reflects revaluation of gold. Changes for individual years do not add to total because certain Philippine accounts held with the U.S. Treasury were included in these data for the first time in 1934 and no change has been computed in these accounts for that year.

‡‡ First nine months at annual rate. §§ Change through November 30.

Sources: Data for "U.S. Competitive Balance" and "Net Foreign Investment," *Survey of Current Business* (July, September, and December, 1954).

Data for "Change in U.S. Net Reserves," U.S. Treasury Department and Board of Governors of the Federal Reserve System.

Prepared by: National Advisory Council Secretariat and Statistical Reports, Office of International Finance, Treasury Department, January 5, 1955.

As in 1953, the United States continued to draw dollars from Canada and from the non-European areas of the Eastern Hemisphere. Our "competitive surplus" with those areas was running at an annual rate of about a billion dollars during the first three quarters of this year.

To Latin America we have continued in 1954 to provide a net supply of free dollars from our non-governmental accounts.

Our balance of payments also enables us to calculate similar figures for the sterling area, which overlaps to some extent with several of the areas already mentioned. In 1953 we had a "competitve deficit" of about $400 million with this area and in the first three quarters of 1954 this had been reduced to about $115 million at an annual rate.

CONVERTIBILITY AND THE BUSINESS COMMUNITY

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WHEN YOUR CHAIRMAN first invited me to speak on the theme of what convertibility means to business, I could not but immediately concur in feeling that the subject so worded represented a challenge. The phrasing seemed to call not just for the usual set statement on the glories, virtues, and tribulations of convertibility or for a technical elaboration of the inner mechanics, but for a broader treatment which would take into account the position of American business vis-à-vis convertibility. Granted that convertibility is a vital and timely topic, it is doubtful whether there is anything fresh or new to be said of major consequence about the requirements and the implications of convertibility per se. On the other hand, I believe that there is a great deal to be said publicly concerning the role and opinions of business, here and abroad, with respect to both policies and actions. There is a definite gap to be filled; there are, unhappily, misunderstandings in both directions to be corrected.

On reflection it sometimes seems as though we had been discussing the prospects and prerequisites of convertibility from the beginning of time, and—what is more—in repeating circles. The imminence of convertibility has been heralded so often that the average man certainly may be excused if he has become a bit cynical about the whole idea. Actually, convertibility alone hardly is worth the inordinate amount of attention it has received. But convertibility has become something more. It has become in a sense not only a shining symbol, but also a convenient peg on which to hang views and recommendations regarding a variety of truly fundamental matters. The inevitable result has been to confuse cause and effect, proposals and decisions, political choices and economic forces. Small wonder if the businessman and the lay public are perplexed as they try to fathom the merits of conflicting arguments and assertions.

I. CONCEPTS OF BUSINESS

To borrow a word from the title of the preceding paper, what convertibility means to business is essentially, if not wholly, a matter of "practical" interpretation, an assessment of views and an appraisal of effects. Perhaps the best way to proceed is by taking a look at the terms themselves.

In the broadest, most general sense, business is thought of as embracing nothing less than the complete process of production and exchange, and as being measured quantitatively by the total amount of all transfer transactions occurring during a prescribed time period. More narrowly, business also is regarded—perhaps with greater frequency—as identified with or denominating a specific sector of the economy, usually that portion concerned directly and primarily with manufacture and distribution, i.e., industry and trade. This concept, moreover, may be widened to permit inclusion of closely related and ancillary services, such as finance, insurance, and transportation. From still another angle, business is at times visualized as an institutionalized grouping of firms and/or persons engaged in the indicated branches of activity, and sharing a common approach and outlook. Where individuals are thus involved, business becomes virtually synonymous with management, and the business view is the managerial view. There are other concepts of business, but these are the three of immediate, pertinent import.

Whatever the formal concept, business far from being indivisible and homogeneous is vastly diverse in interests, attitudes, and scope of activity. The uniformity and identity attributed are largely illusory. A distinction must be made between business which is essentially local or national in character and business which is international, since the problems met and the personalities involved are decidedly different. The precepts and practices valid for the one type may not prove to be so for the other. Nor are the divergencies confined to those created by the factor of geography. They exist even as between firms in the same area or field of endeavor, and to a lesser extent may be found within the single firm.

These comments may sound elemental. They underline, nevertheless, the fact that convertibility's meaning for business must be read in a plural or multiple sense. In addition, they go far toward explaining certain inconsistencies and contradictions of which business as a whole has been accused, but which more properly should be ascribed to difference between particular parts. Finally, they provide a schematic backdrop against which to trace the varied implications of convertibility.

II. Convertibility and Foreign Trade

We know from observed experience that the degree of interest in and understanding of any event tends to recede the farther removed one is from the scene of action. It is not surprising, therefore, that among business groups it should be the foreign trader and

investor who has demonstrated the greatest consistent awareness of what convertibility involves. Foreign trade, in fact, is by nature the first sector of the economy to feel the impact of a change in the international environment, and has the most to lose should the trend be adverse.

Here, as a parenthesis, it should be understood that "foreign trade" comprehends more than merchandise exports and imports. "Foreign trade," restricted to this narrow definition, indeed has become somewhat of a misnomer. The United States has emerged from the day when it did little abroad except buy and sell goods, when it bought many services but sold few, when it depended on foreign banking institutions to finance its external trade, when business firms remained close to home site and invested their funds almost solely in domestic plant. For example, we have reached a point where there are a number of American firms in the organization with which I am associated having world-wide interests but shipping virtually nothing to or from the United States.

Since 1939 the foreign trader and investor has been subjected to more vicissitudes than Job and has responded to them in a similiar fashion. It is a tribute to the resiliency of both that despite these obstacles foreign trade and investment have gone on and grown, even after appropriate allowance is made for that part of exports financed from public funds under the recovery programs. This growth does not alter or contradict the fact that the exporter has found markets closed or all but closed against him, that by governmental edict his competitors abroad have been granted preferred access to markets, and that he has been asked at the same time to assist through his taxes in the rehabilitation and strengthening of these same competitors. Firms with investments abroad have had accumulated earnings frozen in blocked accounts, have had limitations imposed on the amounts transferable, have been forced to utilize non-dollar sources in the purchase of replacement and repair parts, and have been restricted in their right to liquidate operations and move the capital elsewhere. Other firms contemplating new investment abroad, it is true, have been offered in some instances more favorable treatment as an inducement to locate in a given country. They have been assured of the right to remit earnings and, after a relatively brief period, even to withdraw the original capital. The United States government, moreover, in effect has countenanced this discrimination between old and new investment through its ECA-MSA-FOA Investment Guarantee program. On the other hand, new private foreign investment projects have had the disadvantage

of being forced to run a battery of official tests and to submit to foreign governmental "screening," with a better than even chance of being refused entry if they did not fit into the "Plan" of the recipient country or if they showed signs of becoming competitors of local firms already in existence.

These are only a few of the difficulties and frustrations encountered, but they serve to demonstrate what the foreign trader and investor has been up against in his efforts to expand abroad. He has been among the first, nevertheless, to concede the unavoidability of various restrictions and the need for well-administered controls over external transactions as emergency devices to defend slender reserves. His prime complaint has been directed against their deliberate perpetuation and extension for political reasons or because of an unwillingness to face realities. The one word which the foreign trader and investor has seized upon to express the antithesis of all he deplores and to sum up all that he believes should prevail is "convertibility."

There are, of course, any number of definitions of convertibility, some relatively simple, some rather abstruse and conditional. The one which to my mind perhaps best illustrates the exporter's point of view came out of a luncheon conversation. After the subject of the "electronic brain" had been worked over for a few minutes, one of the export executives present suggested: "We wouldn't have much use for an 'electronic brain' in our business. What we need is a machine which you can feed with pounds, francs, lire, any soft currency, and which will turn out U.S. dollars at the other end." This may lack some of the niceties and nuances which an economist or banker would introduce, but it is a good working statement of what the trader wants. In general, the attitude of the foreign trader and investor toward convertibility is a reflection of his belief in the desirability and advantages of a free market economy.

Needless to say, it would be almost impossible to obtain a unanimous opinion on what might currently constitute a free market economy and on the degree to which governmental intervention or interference could justifiably be exercised before the free market economy would cease to exist. To attempt to draw the lines here would entail an extended detour which time does not allow. Within the present context, however, it would be safe to conclude that measures which by intent unduly or arbitrarily limit the area of competition or which are incompatible with convertibility would be inconsistent with and inimical to a free market economy.

Specifically, the exporter of both goods and services looks to the

day when exchange controls and other related artificial impedimenta will not be used to curtail or limit: (1) freedom to locate potential buyers; (2) freedom of choice for the customer; (3) the opportunity to compete with others for the customer's favor; (4) the right to deliver the merchandise without hindrance; (5) the opportunity to transfer the proceeds of the sale or to receive payment in the currency agreed. Except as security considerations might be a modifying element, any type of convertibility or transferability which prevents accomplishment of these aims would be counted by the export trader as less than complete restoration of convertibility.

The direct investor, whether old or new, shares these free market objectives as they touch upon his activities. His main concern, however, is to have the right to transfer as much or as little of his net earnings as he deems advisable, and to have a similar right with respect to capital holdings in the event of sale or liquidation. In his operations abroad he seeks the flexibility of movement and decision which commercial success requires and which currency controls hamper, if not rule out altogther.

The reference has been to exporters and investors as groups. Actually, certain exporters and certain investors in their dealings with individual countries already enjoy these conditions. To this extent there exists a type of bilateral convertibility or transferability on commodity account. Within the given market and the prescribed list of products freed from quantitative restrictions, the exporter in effect has thus partially achieved his five aims, even though there may remain a few minor formalities which either he or the customer must satisfy. Traders generally have welcomed the trend toward convertibility through gradual liberalization of import controls, although at times suspicious that goods so privileged have been carefully selected with an eye to picking only those which are non-competitive, of limited appeal, or of such absolute essentiality they already were being licensed freely. Administratively, there also has been an easement in the remittance of earnings from investments, but the effect has been less noticeable since the privilege of transfer normally has been granted to current profits, although subject in some instances to a percentage ceiling.

In detailing the objectives, however, two of the most significant factors have been omitted or only vaguely implied in passing. The first is that convertibility, if it is to have real meaning, must be established as a right, not merely as an administrative, hedged-in concession. In other words, there must be a full-fledged, functioning

exchange market. The second consideration is that convertibility must be regarded as a "permanent" fixture to be defended and supported, not an on-again, off-again type of exercise. Surely, no one is anxious for a repeat performance of the 1947 experience. From the standpoint of the foreign trader, investor, and banker, an in-and-out, shifting policy is far more of a deterrent, far more to be feared, and even far more objectionable than the retention of moderate controls over external transfers. For example, any firm weighing an investment project must think long range. It is, therefore, less likely to be impressed by convertibility of the moment if there is a strong possibility that tomorrow convertibility will peremptorily be abandoned. There are enough commercial uncertainties and risks to be met in the ordinary course of events without the addition of others brought about by the vagaries of government policies.

Although on occasion the foreign trader may be prone to idealize convertibility or to exaggerate the immediate personal benefits to be derived, he does not mistake it for an abstraction. Convertibility to him is the external manifestation of internal solvency and of integrity in fiscal and monetary affairs. It thus becomes incumbent on any other country which aspires to a convertible currency and the resultant advantages to accept in full faith and in advance the obligations and disciplines which convertibility imposes. More specifically, this means a resolute effort to achieve economy in governmental expenditures, to maintain balanced fiscal and credit policies, and to preserve the incentives to thrift, investment, and greater productivity. A sound and convertible currency cannot be imposed on any nation from without: it must come from within.

III. The Effects of Convertibility

Attention up to now has been centered on the views and attitudes toward convertibility held by a single, though the most clearly concerned, group of businessmen. By and large, other business groups take a similar, but much less intense, position on convertibility. Individual businessmen whose energies are focused almost completely on the local or domestic market may at best, however, have only the most casual, cursory opinion. Although we have come a long way since the day when what happened abroad was presumed to be of import only to a few denizens of Wall and State streets and to some bureaucrats in Washington, foreign trade still is regarded by many as a stepchild of domestic business.

There should be no need, however, to make a missionary speech

on foreign trade and its importance to the economy before this group. It would be equally presumptuous, as well as time consuming, to dwell on the chain effects of changes in our external transactions and to trace step-by-step the implications to various sectors. I would, therefore, content myself with one quotation which represents the combined views of the foreign traders themselves as expressed last month (November, 1954) in the Final Declaration of the Forty-First National Foreign Trade Convention:

> Just what does a high level of foreign trade and investment mean to the American company engaged in the production or distribution of useful goods and services here in the United States? It means, even to those companies which are not themselves in the business of exporting or importing, a higher level of business activity throughout the national economy, and, in consequence, a commensurately larger domestic market for what they produce. It means a lowering of their costs of production through the economies which increased volume makes possible. It means, more directly, a greater availability and a wider variety of the raw materials and other products essential to their own operations, and an opportunity to acquire these products, in the open market, at lower prices. It means a lessening of their costs of distribution arising from the more widespread and economical use that is made of the nation's railroads and other common carriers, and of its banking, insurance, warehousing, and other servicing facilities generally. It means a better market, specifically, in those segments of the economy whose prosperity is vitally dependent upon exports for the disposal of a substantial part of their production. It means, in short, as any increase in the total volume of business that is done must mean, that a better opportunity for growth and expansion is afforded to all American business enterprises. Obviously, whether he realizes it or not, the private enterpriser who confines himself exclusively to the domestic market has a vital stake in foreign trade and investment.

Just what, then, would the quantitative effects of convertibility be on our own foreign trade and investment? Unfortunately, we cannot pluck out a single, simple answer. Obviously, any conclusion has to be conditioned on the type and form of convertibility envisaged as well as on the circumstances of the time. To describe the effects convertibility *would not* or *should not* have is a much easier matter than to sketch the many possible consequences.

For one thing, convertibility is not the gateway to the "big rock candy mountain." The notion has been spread, and is held even by some foreign traders, that once convertibility is re-established an immediate upward lift of substantial proportions will be given to U.S. and dollar area exports. There could be no greater disservice to convertibility than for such a development to occur. Some advance there presumably will be, but unless the export gain is kept within reasonable proportions and is fairly well distributed by

areas, the pressure may prove too great for the exchanges, and convertibility will falter and fail. The only alternative to such a result would seem to be correction through exchange rate fluctuations. The risk of a big increase must be admitted to exist, but does not the restoration of convertibility presuppose general stability in total transactions while changes are taking place within the commodity and country patterns?

Assuming, however, continuation or a slight improvement of the current dollar supply position, a 5 per cent increase in the total amount of U.S. commercial exports probably would be supportable. Imports into the United States are unlikely to show any marked change purely as a consequence of convertibility, although there may be price adjustments. Investments presumably will not at once show any upward response. It is, in fact, even possible that the rate of flow might slow down temporarily until the outlook can be determined with fairer assurance. Export and import service transactions might be expected to behave in about the same way as merchandise, subject to the proviso that restrictions are not continued on outlays for such purposes.

The foregoing may appear to present a rather dismal picture of business prospects and a weak justification for undertaking all the risks of convertibility. The explanation is threefold. First, the expectations outlined or postulated relate only to the short run, and the real advantages of convertibility are realized in the longer run as the effects are transmitted throughout the different economies and as the associated policies begin to bear fruit. Secondly, the gains derived by certain firms or categories of products may exceed the suggested 5 per cent, while the stimulation to the economy as a whole could have even more striking effects. Finally, the establishment of convertibility makes possible an attack on other impediments to trade and investment, and through the pricing mechanism should correct the distortions in trade which have developed during the period of inconvertibility.

Here, we may note the strong desire of many businessmen to have done with the involved roundabout system of "switch," barter and offset transactions which, in fact, foreign traders themselves have created out of necessity as a fractional, though defective, substitute for convertibility. Such a system, while a modern manifestation of the spirit of enterprise and of the trader's enduring ability to devise techniques for threading his way through a mass of restrictive regulations, nevertheless represents at best a cumbersome, inefficient ex-

pedient. That some countries have not merely winked at these transactions but actively encouraged or abetted them may be taken in itself as a tacit admission of the ultimate futility of efforts to regiment trade. The general disadvantages of this system, though not always obvious, far outweigh the limited number of specific advantages accruing to the few economies or firms which are in a position to participate.

Probably the most important effect of convertibility from the commercial-financial angle is that it introduces an element of flexibility. In this connection one of the most telling comments I have come across was recently made by a British businessman, Sir Edwin Herbert, in the course of a company address: "Freedom is an essential quality of life, and marks of life are growth, change, flexibility, and adaptation to changing circumstances. The mark of death is rigidity. . . . We have to choose between growth with its inevitable growing pains on the one hand or rigor mortis on the other hand."

The ultimate gains and benefits will be provided through the impulse convertibility gives to the adoption of more rational economic policies, through the concomitant removal of burdensome and discriminatory controls, through the development of "natural" patterns of trade, through the integration of economies by exchange, and through the restoration of flexibility as a guiding force.

IV. Some Unresolved Questions

Anyone dealing in the field of international economic affairs surely cannot escape the conclusion that much of what we may seek to say must be highly conjectural, that the variables he is working with are too vast to allow otherwise, that his remarks with respect to one country may not be at all applicable to a neighbor, and that there is a highly complex interdependence of issues. But these are exactly the elements which the businessman trading and operating abroad must face on a daily and practical basis. One cannot hope in few words to portray or assess the impact on him of all the shifts and changes, all the varying environments and policies, and all the subtle differences in view and attitude encountered, or his reaction to them. It is difficult to do so even when an attempt is made to confine the survey to a single issue, such as convertibility. As a result many questions highly relevant to the theme must here be left unresolved.

They include such vital questions as: Floating versus fixed exchange rates? The role and desirability of stabilization funds? International trade policies? The role of gold? The gold price? The dol-

lar supply? The place of investments? The treatment of capital? The social framework? Competitive capacities? Considerable space, much more than is here available, could well be devoted to each of these in turn, and—in view of the mixed reactions and positions of business on some of the questions—would certainly be required.

Full and adequate coverage being precluded, the attitudes with respect only to the first three questions may be summarized very briefly as follows: There has been a growing tendency to favor some type of floating rate or at least a fairly flexible rate policy. There is general opposition to the appropriation or allocation of funds by the United States government for the purpose of establishing any additional special currency stabilization fund. There is broad support for freer trade policies consistent with the vital interests of the American economy.

V. Concluding Observations

What then does convertibility mean to business? If we have arrived at any answer it is that there are many answers. To the one group most affected and most involved, the foreign traders and investors, it is the "indispensable key to a broad and expanding flow of multilateral trade." To all branches of industry and commerce, it is the avenue to greater sales and activity. To the whole economy, it is the channel through which a better standard of living may be achieved.

Whether we are to have convertibility, however, depends not on the businessman, but on the state of mind of the people as a whole and their political leaders, here and abroad. It depends on whether there is a willingness to indorse the principles and live up to the obligations of convertibility. It depends on whether there is an underlying sympathy for convertibility. It depends on whether each nation is willing to consider itself a custodian of convertibility. It depends on whether the world is ready.

CHANGING CONCEPTS OF CONVERTIBILITY AND THE FUTURE OF CURRENCIES

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I

CONVERTIBILITY IS PRE-EMINENTLY a practical problem and it has been treated wtih great sagacity by the two government and business practitioners who have just spoken on the theme. If a professor may hope to add something of significance at this juncture he may need to take refuge in abstraction; and this I beg leave to do, at least at the outset.

Why does the problem of convertibility exist? Fundamentally it exists because there are separate nation states, and because national currencies reflect in the variations of their values the whole gamut of conomic forces which impinge in quite different ways upon the various national economies. Convertibility would be a much simpler matter—though by no means automatic—if monetary and fiscal policies were everywhere the same. But what an enormous "if"! It would almost require uniformity (supposing it possible to give the term concrete meaning) of labor-union, farm-bloc, or industry pressures on prices and credit, equal weighting of full employment versus price stability in national policies, equal devotion to welfare programs, etc. Certainly convertibility could be upset, as indeed it often has been, by national monetary and fiscal policies which arise from the desire of people to enjoy a higher standard of living than is really possible. This tendency, resting upon what it is now fashionable to call the Duesenberry effect for individual items of outlay, I should like to call the Micawber effect for the *total* of outlays, in honor of that redoubtable character of Dickens who sought to live on the issue of I.O.U.'s. Some "underdeveloped," low-income countries, and at least one of the most respectable developed economies of Western Europe have experienced currency difficulties precisely because of the Micawber effect.

But convertibility has succumbed to exchange control not only because of more or less strictly monetary and fiscal factors, but also because of the strength of protectionism, because of adverse develop-

ments in productive efficiency, because of unfavorable changes in the commodity terms of trade, etc. It is not necessary to add further illustrations from the welter of economic variables which underlie and condition convertibility. Some economists, indeed, such as Thomas Balogh and A. C. L. Day, are driven to the conclusion that convertibility, at least for other than the dollar currencies, is a virtual impossibility. Without at all accepting this idea of an inevitable dollar shortage, it would appear at the very least—and this is the point I wish to make—that convertibility is apt to be a more or less perennial and unbiquitous problem.[1] A generation or so ago, convertibility appeared to be the normal accompaniment of almost any decent system of domestic finance. Today it appears as something hardly won and easily lost. This higher degree of *vulnerability* of convertible currencies, partly because of stronger social and political urges toward unorthodox finance, partly because of greater readiness to resort to disruptive direct controls, and partly because of deep-seated structural changes in international trade, must constantly be borne in mind.[2]

Among the "changing concepts" I should therefore wish to record an increasing appreciation of the complexity of the problem of convertibility, a complexity which the stoutest liberal would scarcely wish to deny. At the same time, however, I would wish to maintain that an appreciation of the importance of convertibility has been winning ground, and that the means of achieving convertibility have increasingly been recognized to consist in certain "liberal" controls such as monetary and fiscal policies. These two matters are intimately related. In the thirties and during the war years, convertibility—in the sense of the freedom of any holder of any national currency to exchange it at will at the ruling rate of exchange for any other currency—was rather generally regarded as an expendible privilege of the private citizen which could be revoked with impunity in those countries which had "learned to manage their economies." Con-

1. As long as real factors exist which prevent the realization of unified world markets, it is fatuous to speak of a "world currency." There was a shade of this fatuity in the terms "unitas" and "bancor." More recently, Colin Clark has recommended a commodity-based currency of some such constitution as Benjamin Graham's, because in Clark's opinion it would mean the end of exchange controls, block accounts, inconvertibility, etc. Cf. *Bankers' Magazine* (London, July, 1954), pp. 9–14.

2. A few economists take the position that freely fluctuating exchanges would answer all problems of convertibility. It scarcely seems possible to deny that a sufficiently drastic depreciation would permit the maintenance of convertibility of any currency. Aside from the possibility of an enormous flight of capital during the process of reaching equilibrium, there are other social costs of low foreign exchange values which may make exchange depreciation undesirable at least for *considerable periods*.

vertibility being thus conveniently shelved, intercurrency relations were supposed to be conducted on the basis of an international liquidity fund, concerning which it was explicitly stipulated that its management should not give advice concerning the domestic financial policies of member countries. Convertibility was generally in suspense and so were the rules of the game for securing it.

But convertibility has been found to be something more than a private pleasure. It has become apparent how disasterously those payment arrangements which have grown up in the absence of convertibility—clearings and exchange controls—have abridged the efficacy of the market forces. In the eloquent words of the author of *Foreign Exchange in the Postwar World:* "In the absence of political unification the principal coordinating force available to the free world economy is the operating of unfettered markets for goods and capital. In the broadest sense therefore the defense of the free world and its institutions depends upon the creation of a payments mechanism which will permit the unrestricted operation of these market forces."[3]

Let me repeat and emphasize the words "unfettered markets for *goods and capital.*" Unless goods can be produced by the cheapest sources and sold where they fetch the most, it is impossible to maximize national incomes. But it is also true that *capital* must go to its optimum employments; the uncleared balances of bilateral clearing, as well as the loans imposed upon creditors in such regional clearing arrangements as EPU, cannot by any stretch of the imagination be regarded as optimal employments. They are rather interest-free, forced loans.

By parity of reasoning, the kind of limited convertibility which seems to be the most which can be expected in the proximate future —convertibility only for foreigners and probably also only for limited capital transfers—cannot maximize the international utilization of capital. This understates the matter, since not only is the *use* of capital at stake but also its *availability*. The one great obstacle to international private investment is nowadays exchange controls. Economic progress in the underdeveloped world would be greatly facilitated by large private investments on the part of the high-income high-saving economies; and the rationalization of important sectors of Western European industry likewise depends partly on extensive capital inflows. Private capitalists are naturally

3. Raymond F. Mikesell, *Foreign Exchange in the Postwar World* (New York, 1954), p. 523.

loath to commit their funds if the withdrawal of principal, and even of earnings, is impeded. Convertibility with embargos on capital exports may be a necessary intermediate stage; but it sorely limits the tempo of economic development.

The drive toward free markets and the operation of market price mechanisms has recently characterized even such countries as England and Holland and has begun to clear away the chaos produced by postwar controls. Simultaneously it seems to be even more widely recognized that monetary and fiscal control of the volume of domestic expenditure is the only way in which chronic balance-of-payments deficits can be mastered. Successive reports of the Bank for International Settlements over the past four or five years have recorded the chief events in the progress of Western European countries toward freer money markets and the restoration of monetary control by central banks and treasuries. And the remarkable narrowing down of the dollar gap has not only paralleled this evolution in general, but has been almost perfectly correlated with the relative progress of each country in mastering its inflation. Because of the great growth of money income in the United States (and the fact that it did not lag behind the growth of real income) a reduction of the dollar gap could be effected in Europe without deflation, i.e., merely by a lesser inflation than the American. In any event, "changing concepts" regarding convertibility have swung full circle since Bretton Woods; and it is now pretty generally recognized that monetary systems cannot exist without rules of the game. An effective international monetary authority such as the Managing Board of EPU can scarcely be regarded as "interfering" in the domestic affairs of a member country if the Board makes the extension of credit to that member contingent upon its achieving a greater degree of budgetary balance. This is a sheer necessity for *any* system.

II

If the swing of opinion and policy has so clearly favored the restoration of free market forces, why has convertibility not yet been attained? The answer seems to be that though the underlying factors have been greatly improved, there are still very substantial risks in going over to open currency systems.

One of the most favorable factors for the realization of convertibility is the extended area over which limited types of convertibility are already realized. Within the European Payments Union, covering two-fifths of the world's trade, bilateralism and discrimination

in payments among members have been eliminated; and furthermore, some of the members—Great Britain, Germany, Italy, and Holland—have even reduced discrimination against dollar imports. The other great area of internal multilateralism, the sterling system, extends over half the world's trade.[4] It is not easy to find a simple expression of the degree of convertibility already attained by sterling. Within the area, transfers on current account are unlimited and capital transfers seem to be virtually free also. Outside the sterling area, sterling has now reached practically unlimited transferability.[5] Transferable sterling cannot, of course, be converted into dollars except in the open market, but here the rate has recently closely approached parity. Furthermore the fact that most commodities except wheat and cotton may be purchased with sterling, even though the United Kingdom may have paid dollars for them, further increases the approach to convertibility. However impressive this may be, one should not neglect the barriers to dollar convertibility imposed upon residents of the sterling area, nor forget that much of the actual convertibility is *de facto* rather than *de jure*.

The reduction of bilateralism and discrimination through the European payments and sterling systems was accompanied by fundamental economic improvements which nowadays greatly increase the prospects of convertibility. The volume of industrial output in Europe is now 40 per cent, and agricultural output 20 per cent, over prewar levels, even the agricultural segment having kept ahead of population increases. The degree of trade liberalization achieved in 1954 generally exceeded levels attained in 1952 and 1953 (France being the notable exception), despite recession in the United States. Inflation has been stopped in most of Western Europe. Exchange rates have come close to equilibrium positions; the spread between free and official rates on banknotes has been generally reduced to small proportions; and the price of gold bars in various free markets has nearly reached the U.S. Treasury price.[6] Gold and dollar holdings of other countries than the United States increased from $18.3 billion in 1945 to $26.3 billion in 1953, most of the increase in the latter part of the period accruing to the sterling area and Western

4. The EPU and sterling areas are, of course, partly overlapping circles.

5. In March, 1954, the transferable account status was extended from eighteen countries to all countries with three exceptions (Hungary, Persia, and Turkey) and subsequently to all with the single exception of Turkey.

6. Cf. Bank for International Settlements, *Twenty-fourth Annual Report* (Basle, 1954), pp. 6, 12, 117, 140, 151.

Europe where the convertibility of currencies is now most crucial.[7] During the first half of 1954, this total mounted to $27.4 billion, an addition of nearly $1 billion, or only slightly less than in the first half of 1953. Since midyear, foreign reserves of gold and dollars have continued to grow.[8]

Because sterling is the key to the convertibility situation, it is particularly significant that Britain has broken a prevailing pattern and has now passed a third year without crisis, without inflation, and with full employment. A most auspicious development for the return of the convertible pound is the fact that the United Kingdom dollar-area deficit over the years 1948–53 has been reduced *chiefly* by an increase of exports rather than by reduced imports or by United States aid, although these have played a role.[9]

For this development a number of domestic and international factors are responsible. On the domestic front, the restoration of flexible monetary policy helped to restrain import demand and to increase personal savings to a level of a billion pounds annually, ten times their level at the postwar low point. Freer commodity markets and the increase of supplies of non-dollar materials and manufactures have strengthened the English economy, and output has continued to increase at 2–3 per cent per annum. Indeed, despite recession in the United States, output increased at slightly larger rates in 1953 and 1954. In international matters, Britain has benefited from a larger rise of export prices than of import prices over a two-year period. But the expansion of export yields has not been merely a matter of passivity, for Britain increased the degree of liberalization of trade from 46 per cent in April, 1953, to 59 per cent a year later and to 80 per cent in April, 1954. Finally I make passing note of the fact that, since 1949, there has been a noticeable increase of the proportion of sterling held by residents of the dollar area, an expression of confidence, and a reassurance to the United Kingdom that relatively "safe hands" hold her liabilities.[10]

The prospects for convertibility not only for the United Kingdom but for most of Western Europe have been greatly enhanced by the surprising resilience of these economies against recession in the United States. Because the recession of 1949 had such dispropor-

7. *Ibid.*, pp. 9, 158.

8. *Federal Reserve Bulletin* (October, 1954), pp. 3–4.

9. Cf. Arthur B. Hersey, *The World Payments Situation* (mimeographed). Fourth Meeting of Technicians of Central Banks of the American Continent, May 3–14, 1954.

10. Cf. *Economist* (April 24, 1954), pp. 266–67.

tionate effects in Europe, we have witnessed the paradox of *great* fears of a *small* decline in American economic activity. One of the explanations of the remarkably small impact of our recent recession may be that other items than commodity imports which bulk large in our balance of payments are relatively inflexible. As Arthur Hersey points out, a 20 per cent decline of commodity imports from the 1952–53 level would mean a subtraction of only $2 billion from a total supply of dollars of $19 billion, which includes payments for ordinary services, military expenditures abroad, private donations, governments grants, and other capital exports.[11] But beside this more or less arithmetic matter, the restoration of monetary controls, the freeing of many domestic commodity markets and the liberalizing of international trade certainly fortified the European economies against reversals. Finally, confidence in the recuperative powers of the United States economy seems to remain very high in Europe despite years of intense communist propaganda.

III

All of this adds up to a very favorable conjuncture for convertibility; and I believe that, when all the unfavorable elements have been tallied up, convertibility could be ushered in within the space of one or two years by the application of wise policy. But, as few students of the problem have omitted to say, conversion cannot this time be allowed to lapse, unless the prospects for a free system of international payments are to disappear for the visible future. What is therefore required is that all serious doubts and obstacles first be resolved and all necessary preparatory steps be taken. A "dash for convertibility" might too much resemble the charge of the Light Brigade.

First come those perennial doubts concerning the role of the United States. In some directions, recent developments—as we have just observed—are reassuring: the vulnerability of Europe to our cyclical variations is less than had been feared and the stability of our economy has passed all expectations. Still, in formulating a program for achieving and making convertibility secure, it seems to be wise to take nothing for granted and to go as far as possible in laying down plans for commodity stabilization and other international means of furthering general economic stability. Another direction of misgiving with regard to the United States, the fear that our rate of technological advance results in a chronic shortage of dollars, is

11. Hersey, *op. cit.*, p. 59.

losing rather than gaining ground. It is of course quite possible to construct theoretical conditions in which equilibrium cannot be attained, or to imagine practical conditions (rigidity of prices, incomes, exchange rates, etc.) in which the attainment of equilibrium would be slow. What has, however, most disasterously undermined the supposed technological basis of a chronic dollar shortage is the monetary element. Even if productivity persistently increased more rapidly in the United States than elsewhere, and even if exchange rates and commodity prices showed persistent rigidity, dollars could not be rendered chronically short unless money incomes in the United States rose less rapidly than real productivity. And that, as Professor Lionel Robbins asserts, is highly unlikely for the postwar period.[12] This being true, it would only be necessary that countries with slower growth rates of productivity inflate their currencies less rapidly than the United States.[13]

The other grave doubt concerning the United States pertains, of course, to our traditional protectionism. Such doubts are inflamed by such episodes as the recent action on Swiss watches; and our "peril point" and "escape clause" legislation may limit trade as much by the uncertainty it engenders for foreign manufacturers as the tariffs do by raising their costs. But American tariffs do make a significant difference for convertibility because our protection is aimed chiefly at manufactures, i.e., chiefly at imports from Europe, and convertibility is most crucially a European matter. The economist is warranted in being a bit wearisome in insisting that if we Americans have a really genuine interest in multilateral trade, free enterprise, and freedom of payments, we shall not negate the gains made by Marshall Aid, our support of EPU, and the like, by protective tariffs and agricultural price supports.

Protectionism in various guises is, however, by no means a monopoly of the United States. One of the chief concerns of countries going over to convertible currencies will be that other countries shall not discriminate against the exports of the new hard-currency countries. Against this risk the sovereign remedy is that a maximum number of countries go over to convertibility simultaneously. It is also this risk which makes the single-country path to convertibility a thorny one. The larger the number of convertible currencies, the greater the pressure on remaining countries to make their exports genuinely

12. Lionel Robbins, "The International Economic Problem," *Lloyds Bank Review* (January, 1953), pp. 1–25; cf. especially pp. 6–7.

13. Cf. Sir Sidney Caine, "Some Doubts about Sterling Area Policy," *Lloyds Bank Review* (April, 1954), pp. 1–18, especially p. 11.

competitive with the others. Convertibility breeds convertibility.

The whole movement toward convertibility can, of course, be neutralized by a shifting of protection and discrimination from payments to tariffs and quotas. The OEEC has set a model in securing the liberalizing of trade step by step as intra-European payments have come under the non-discriminatory system of EPU. The change-over from transferability to convertibility into dollars rests in the first place upon financial restraint, correct exchange rates, and in some cases disinflation in the individual country. But in the second place, it requires international collaboration, and this at no point more conspicuously than in the perfection of GATT or some other commercial code to serve in lieu of the still-born International Trade Organization. Popular opinion abroad as well as in the United States seems always to reveal a certain quickness of appreciation of the merits of a "gold standard" or an equivalent modern system, and a curious obtuseness regarding the commercial policy counterpart, without which it means nothing. This counterpart lagged behind sorely in the actual accomplishments of Bretton Woods; it lags behind today and effectively conditions any advance in the monetary standards.

Another risk, which may be called the "conversion drain," pertains to the possible loss of reserves in consequence of the relaxing of restrictions on dollar imports. Potential losses on this score have been estimated by the Randall Commission at something between $1 and $3 billion.[14] But there are good reasons for supposing that this loss may be even less than the lower of these figures.[15] Half of the exports of the United States go to areas having no exchange controls, such as Canada and Central America, or which do not now discriminate against dollar imports; and this portion of our exports would, of course, be unaffected by the removal of discriminatory controls. In the second place, the proportion of United States and Canadian exports is already considerably larger than before the war for the world as a whole and for Latin American and EPU countries (though not for the sterling area); and this may make a further extension of dollar imports less probable. Finally, the reduction of inflationary pressure and the reduction in foreign aid tend somewhat to offset any increase from other causes.

14. Commission on Foreign Economic Policy, *Staff Papers* (Washington, 1954), p. 18.

15. The following discussion is based upon the analysis of Robert Triffin in *International Currency and Reserve Plans* (mimeographed). National Bureau of Economic Research, New York, 1954.

IV

The risks incurred in going over to convertibility are by no means exhausted by those already recorded. The United States economy may fall victim to longer or more severe depression than now seems probable. Or it might be that prophecies, such as Professor Robinson's, will be correct that the United Kingdom will have to settle down to a level of imports only four-fifths of the prewar level.[16] Practical policy cannot, however, be inhibited by every imaginable contingency, particularly by every imaginable factor on the side of pessimism. Furthermore, if convertibility were once successfully introduced, some of the longer-run contingencies could be met by monetary and exchange rate policy at the appropriate time. But there is one particular risk, the possible inadequacy of international currency reserves, which must be assessed in reaching any defensible position regarding convertibility.

What magnitude of reserves is to be considered "adequate" obviously reflects a composite judgment of the entire situation, and in this light the "adequacy" of reserves is not *a* risk of convertibility but *the* risk of the whole operation. An escape from this analytical dilemma is afforded by the separate consideration of medium long-run factors which are decisive as to whether convertibility seems to be attainable, on the one hand, and the question as to whether reserves can take care of short-run variations, on the other hand. This logical division into short- and long-run factors unfortunately affords no substantive solution, because what is short and what long is a matter of individual judgment. Consequently the evaluation of the prospective adequacy of reserves has to depend on chronological comparisons and, in the end, on "horseback judgments."

In absolute dollar magnitudes, European monetary reserves increased by about one-third from 1952 through 1954. This striking increase has meant that reserves have reached levels for all significant currency areas which are higher than 1948, and—for all except France—higher than 1938 and 1928. But the decline in the purchasing power of money makes these absolute dollar figures inconclusive. By stating reserves as a ratio to imports, e.g., as the equivalent of a certain number of months' imports, this difficulty can be eliminated. In these terms, no Western European country had a lower ratio of reserves in 1953–54 than in 1948, and in general the ratio was much higher; even if comparison is made with 1928,

16. Austin Robinson, "The Problem of Living within Our Foreign Earnings," *Three Banks Review* (March, 1954), pp. 3–19.

the ratio is higher except for France, Italy, Norway, and Sweden. This pronounced gain in reserves since 1948 was registered by countries outside the United States, which experienced a marked decline of reserves relative to imports. Thus it is possible to say that international currency reserves are "far better distributed with relation to most countries' import levels and export instability than has probably been true at any time in the recorded past."[17]

So far as concerns the United Kingdom, however, the key country in the convertibility problem, the picture is less favorable. If account is taken of sterling *liabilities* (even excluding those owed to the rest of the sterling area) the *net* reserve position of the United Kingdom would be negative. Doubtless this implies a "dim" view of the possibility of funding these liabilities or at least of reaching agreements with creditors, but it touches upon a vulnerable point. Even without this netting out of liabilities, the sterling area gold and dollar holdings in 1954 fall somewhat short of the lower limit of $5–10 billion which various writers have considered a safe minimum.[18]

But, finally, what role is played by United States military expenditures in providing monetary reserves? Hersey points to the fact that, if we make the rather extreme assumption for Germany, Netherlands, France, Italy, and the United Kingdom that imports would be the same without dollar aid as with it, the absence of United States military expenditures in these countries would have left only France in a dollar deficit position by 1953.[19] Any moderate reduction of military expenditure could be compensated by appropriate variations in United States exports or imports, if additions to reserves continued to increase in Europe at the rates realized during the last three years. But a continuance of this rate cannot, of course, be taken for granted, and the reserve position of the sterling area is relatively thin. Consequently additional provision of reserves seems to be a prerequisite before convertibility is generally undertaken.

V

If the diagnosis presented in the foregoing sections is approximately correct, *boldness* in pursuing convertibility consists less in an immediate plunge into conversion than it does in the bold use of monetary and fiscal devices for securing domestic stability, and in a program of action on a broad front in international matters. As

17. Triffin, *op. cit.*, p. 23.

18. Caine, *op. cit.*, p. 9; Mikesell, *op. cit.*, p. 516.

19. Hersey, *op. cit.*, pp. 17–19.

for domestic stability, enough has already been said. The great difference between the present setting and Bretton Woods, a decade ago, is that it was then apparently imagined that domestic finance could go merrily on its own way without undermining a system of stable exchange rates and free payments.

What may nowadays be the chief shortcoming is the absence of the second part of the prescription—a definite program for introducing convertibility. As M. W. Holtrop recently pointed out, many countries stand on the verge of convertibility, but—suffering some sort of paralysis of policy—are all ready for a swim without going near the water. They fear the possibility of new restrictions on payments and higher tariffs on the part of other nations, and they are left in the dark as to what financial assistance they may expect from the Fund or from other quarters.[20] I therefore enthusiastically welcome the formulation of a definite program for attaining convertibility, such as that of Professor Mikesell who, through the fortunate design of the chairman, is shortly to participate in the discussion. I can save a great deal of time by agreeing with most of his proposals and by referring to his supporting argument in published form.[21]

Professor Mikesell lays great weight on internal stability in Great Britain, and upon the realization of correct exchange rates. He seems to me to move on firm ground in questioning the gains of a freely fluctuating rate for the pound sterling, though I would lay more weight on the peculiar position of sterling as a key currency and the exceptional character of the pound-dollar rate as justifying this relative fixity, and I would envisage a considerable role for rate fluctuations of other currencies than sterling. But we would apparently agree that variation of the rate on sterling would be useful in a transitional stage to convertibility (p. 491). It is well to emphasize the importance of possible future gains in British productivity in keeping the pound convertible (p. 491), and the necessity that the overseas sterling area mitigate the severity of its drafts upon British capital (p. 488); or alternatively that a large part of the sterling balances be funded (p. 487). The desirability of a simultaneous movement of many countries to conversion is emphasized, as well as the necessity of an expansion of available international reserves.

20. International Monetary Fund and International Bank for Reconstruction and Development, Ninth Annual Meeting, Press Release No. 14, September 25, 1954.

21. Raymond F. Mikesell, *Foreign Exchange in the Postwar World* (New York: Twentieth Century Fund, 1954), pp. 483–542.

No less important are the proposals to expand off-shore procurements in the interest of multilateral payments, to reduce the dependence of the nondollar world upon raw materials from the United States, to strengthen the GATT and promote co-operation between it and the International Monetary Fund, to stabilize the demand for international raw materials through international commodity agreements, to foster increased United States investment in Europe and in underdeveloped areas, and to encourage the opening of United States markets to European products. All these have a place—some of them very crucial—in providing the conditions for the successful resumption of currency convertibility in Europe and elsewhere.

If now I raise a question regarding the usefulness of the European Payments Union and indeed of the sterling area in the transition to a system of convertible currencies, it is not to deny that there are arguments which appear quite plausible for that particular procedure. The case is ably put by Professor Mikesell and Professor Triffin and there are many exponents of this view. The European Payments Union, it is said, can continue to serve as an organ for eliminating trade discrimination and as a means of moving toward *de facto* world-wide convertibility; it can continue to give short-term credits for over-all clearing debtors; and it can provide a stand-by mechanism for multilateral clearing in case of a recurrent shortage of dollars.[22]

But there are sufficient grounds for believing that, instead of being a "valuable adjunct" to the realization of convertibility, the regional organizations may imperil the process. Primary among these grounds is the fact—and here I cannot refrain from employing some words of Professor Mikesell's—that the EPU "is essentially a mechanism of group discrimination against the dollar area."[23] From this it seems to follow that, with the institution of dollar convertibility and the suppression of anti-dollar discrimination, the *raison d'être* of regional payments systems disappears. The fact that EPU and the sterling area have up to the present substituted multilateralism for bilateralism internally does not permit a projection of this process for the future. Within each area this process has now gone as far as it can, and hence the persistence of the regional schemes would probably mean the persistence of anti-dollar discrimination. Further-

22. Cf. Raymond F. Mikesell, *op. cit.*, pp. 496–500 ff.; Mikesell, "The Emerging Pattern of International Payments," *Essays in International Finance*, No. 18, Princeton University, April, 1954; Robert Triffin, *op. cit.*, pp. 20–21, 39–41.

23. Mikesell, *Foreign Exchange in the Postwar World*, p. 496.

more, the suggestion that new regional organizations, such as a Latin American payments union (or perhaps one for the Near East or Southeastern Asia) does not carry much conviction. In the first place these are commercially unimportant areas, and once convertibility is attained for sterling and for several or all Western European currencies, the convertibility of these peripheral currencies ceases to be very difficult, assuming the will to have it so, or very crucial. Secondly, scarcely any of these imaginable regions has any notable internal cohesiveness: the important trade relations are with North America or Western Europe, not within the region itself.

As important as the provision of increased amounts of international liquidity is, per se, I doubt whether the readiness of regional group members to extend credit to an over-all debtor vis-à-vis the group is really desirable. It tends to perpetuate an emphasis upon, and practical measure to, secure balance within the group, whereas the very object and nature of real multilateralism is to secure a balance of a given country in its accounts with all other countries. This would be the very point of centralizing a reserve of international means of payments with a truly international agency such as the International Monetary Fund. To strengthen its reserves *may* easily result in strengthening tendencies toward regionalism and lack of multilateral convertibility.

This fundamental objection to the regional approach to convertibility may be exemplified in other terms. The practical operation of the sterling system has been to place upon the United Kingdom the burden of maintaining not only the internal transferability of sterling but also that degree of convertibility into dollars which has actually been maintained. Thus, to a certain degree the United Kingdom has had to resort to more intense anti-dollar discriminaton in order to compensate for the excess import demands of overseas sterling countries and for their heavy drafts on British capital. Regionalism thus has the effect, in some degree, of divorcing the consequences of an individual country's internal monetary and fiscal policies from the behavior of its currency on international markets.[24] In the case of the sterling area, the United Kingdom has intervened as a buffer, but some recent studies have expressed doubts whether she can or should continue in this role.[25] In the case of EPU, the

24. Cf. Gottfried Haberler's excellent monograph on *Currency Convertibility* (New York: American Enterprise Association, 1954), especially Section X.

25. Cf. A. R. Conan, *The Sterling Area* (London, 1952), and A. C. L. Day, *The Future of Sterling* (Oxford, 1954).

intervention of the organization results in an inveterate tendency for the over-all debtors to exhaust their quotas.[26]

Well has it been said that convertibility, in and of itself, does not end the problem of over-all debtors and creditors.[27] But there is a vital difference between an inclusive multilateral system with one central fund and one or more regional systems. Discrimination against outside currencies intervenes to compensate in some degree for domestic policies resulting in persistent debtor (and hence creditor) positions, whereas no such compensation is possible in an open system. Regionalism may indeed serve, as Professor Mikesell points out, as a substitute if dollar convertibility breaks down. But to maintain regional systems now in any significant sense of the term simply means that by so much convertibility is not attained.

In closing let me revert to the opening portion of the present paper. Convertibility is a pearl of great price in furthering the efficacy of market forces and the economic strength of the free world. While its attainment is not an intractable or insoluble problem, as some economists have maintained, it is a matter of great complexity because such a large variety of adversities can interfere. Only by a great degree of self-discipline in domestic affairs and by effective and continuous co-operation can the chief trading nations of the world secure and maintain convertible currencies. The co-operative effort must extend over a wide variety of essential conditions and the present task of economists is to work out in detail the practical program. Quite fortunately this undertaking has already been carried to an advanced position.

26. Cf. Friedrich A. Lutz, "Das Problem der Konvertibilität Europäischer Währungen," *Ordo*, Vol. 6 (1954), pp. 79–131, especially pp. 84–86. This is the most exhaustive treatment I have encountered of the weaknesses of the EPU. Cf. also Triffin, *op. cit.*, p. 19.

27. Robert Marjolin, "The European Trade and Payments System," *Lloyds Bank Review* (January, 1954), p. 15.

DISCUSSION

RAYMOND F. MIKESELL:* I once set down in print nine types of convertibility which I thought exhausted the useful categories in this field. Since that time I have learned that someone has identified more than twenty types of convertibility. I doubt whether this sort of thing gets us too far, but we do need to know just what it is we are talking about when we speak of convertibility.

Two points in Mr. Heatherington's paper struck me as especially significant and upon which I want to comment. One is that convertibility—if indeed it is to exist in any significant form—will not mean a vast increase in United States exports of either goods and services or capital. In fact, I am not as sure as Mr. Heatherington that exports will increase in the short run by as much as 5 per cent following convertibility. It could be that the monetary conditions consistent with the kind of convertibility he is talking about would mean no increase in U.S. exports, or conceivably a decrease. To my mind, the longer-run improvement of U.S. exports which might be expected from the restoration of competition in international markets must come from an increase in U.S. imports. To put it more broadly, I believe that the most important benefits to all countries from the restoration of the conditions for successful convertibility are to be derived from a shift in the patterns of production and trade which will result in larger Western European exports to both dollar and non-dollar markets in competition with dollar goods. Restoration of world-wide competitive markets may also provide some stimulus to agricultural production in the non-dollar area. Whether or not the complex adjustments which will accompany the removal of trade controls will result in an immediate increase in U.S. exports, I do not believe is predictable in advance. The important thing is whether these adjustments bring about a more economical distribution of world resources. I think there is good reason to presume, however, that the total quantity, as well as the quality, of world trade will improve.

Regardless of what happens to the total value of U.S. trade, we are likely to see changes in the composition of U.S. exports following convertibility unless price relationships change in such a way as to bring about the same pattern of demand under conditions of uncontrolled trade as existed with trade restrictions. I should like

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to see some educated guesses as to how the restoration of competitive world markets would affect this pattern.

There would also be a change in the rules of the game for exporters. Those who now find a ready demand for their products in terms of local currencies and whose real problem lies in the ability of the foreign buyer to get a license will, after the removal of trade and currency restrictions, be faced with serious price, quality, and perhaps credit competition. Many exporters have recently had to face stiff competition for the first time since the war and some of them clamor for the government to do something about it. Some of the people who complain the most about currency and trade barriers may not like competition any better.

I have often wondered just how much a restoration of competition in foreign markets might benefit the terms of trade of other countries, as a result of a cut in our export prices. We usually hear the argument that convertibility will be accompanied by a deterioration of the terms of trade of other countries, but I am not at all sure what the net result might be.

The second point on which I want to comment relates to the concept of convertibility itself. Mr. Heatherington outlined what the businessman means by convertibility and it is worth noting that four of his conditions have nothing to do with convertibility as a financial concept, while the fifth, the opportunity to transfer local currency proceeds into dollars, is not a problem in trading with most exchange-controlled countries where the real control is to be found in trade regulations. Not even the establishment of truly free exchange markets is going to relieve the exporter of a large part of his woes if foreign countries continue to maintain quotas, import licensing, and other restrictions.

The kind of convertibility most widely advertised today, convertibility of international balances for nonresidents, is largely significant as a means of reducing the motive for trade discrimination. This type of convertibility for sterling will assure that Argentina will have no *currency reason* for discriminating as between sterling and dollar goods, but, of course, it will not prevent Argentina from negotiating a discriminatory trade agreement with Britain for purely commercial reasons.

Mr. Willis has given us an interpretation of convertibility in terms of broadening the area of competition and reliance on the price mechanism, which I think is quite useful. Concepts like competition, the gold standard and convertibility cannot be rigidly defined, but

must change as new institutions and practices evolve. We must, however, consider certain techniques from the standpoint of their effects on international markets and the restoration of competitive conditions.

For example, should countries adopt financial convertibility or delay this step while progressively reducing barriers on imports by their own citizens? This is a question which must be decided, not only on the basis of the international position of the individual country but from the standpoint of the world's dollar position. Is the world in a position to stop discriminating against the dollar without bringing about a serious contraction of total world trade? My own feeling is that the time has arrived for taking this step and that the elimination of discrimination, even without immediately dismantling all of the over-all controls on trade, would have very beneficial effects on world competition. But as Mr. Willis pointed out, no Western European country wants to take this step alone, since it does not want to become a dollar island in an inconvertible sea. This, of course, is the problem that the OEEC has been struggling with for some time, namely, how to bring about a concerted move toward convertibility in Western Europe so that no one country suffers as a result of discrimination by others.

FRANK A. SOUTHARD, JR.:* I have no disagreement with Mr. Heatherington's paper. He has acceptably described the cost of inconvertibility to American foreign traders. Discrimination against the dollar forces foreign buyers to turn to other sources of supply. Discrimination against so-called less essential goods reduces markets for those goods. Overvalued currencies lead to blocked accounts and delays in commercial settlements.

I agree with him that convertibility should be clear-cut; but I am sure he would not scorn *de facto* convertibility. I also agree that convertibility should be permanent; but this does not mean that countries should wait until there is no risk whatever of failure before establishing convertibility. If they do, we shall never have it.

Mr. Willis has properly emphasized that internal stability and convertibility go hand in hand—that inflation frequently means inconvertibility. There have been a number of postwar illustrations of this relationship. Germany was a morass of economic stagnation prior to the currency reform, and even thereafter threatened the solvency of the EPU by overimporting. The Netherlands then re-

* International Monetary Fund.

placed Germany as a chronic debtor. Greece and Austria were so far sunk in inflation and exchange instability as to be among the chief candidates for large-scale international subsidy. Yet all four countries responded quickly to classical anti-inflation remedies and, while none has a fully convertible currency, the groundwork has been laid.

To these examples may be added countries like Canada and Peru which have rid themselves of exchange restrictions, and Mexico, which despite all difficulties resolutely rejects exchange control and holds to full convertibility.

The striking fact is that no country which has moved from instability and restrictions to stability and convertibility (or near-convertibility) will willingly retrace its steps to the more sheltered and "safer" precincts from which it escaped.

As Mr. Willis has shown very clearly, the general progress toward convertibility has been encouraging. Indeed, as I look back to 1947 the improvement in the balance of payments positions of most countries has been almost unbelievable. It fell to me in August, 1947, to preside over the hurried meetings which immediately preceded the abandonment of sterling convertibility. Thereafter we struggled through the black winter of 1947–48 trying to find emergency credits such as French-Italian aid to keep countries going until the European Recovery Program could be devised. Where we now stand seems a long distance from that troubled period when even to mention convertibility was altogether presumptuous.

In fact, as both speakers have said, a great deal of convertibility already exists. In this hemisphere most countries are on a fully convertible basis. In other parts of the world there is a very considerable and growing amount of *de facto* convertibility. What we are now waiting for, as Mr. Heatherington has said, is the adoption of convertibility on a formal basis by the United Kingdom and the leading continental countries. So far as I can see, progress can still be made for a while longer on the step-by-step basis which has been operating in the last few years. But at some point of time we must expect that the paraphernalia of exchange control will be dismanted by these countries and that they will make currency convertibility a part of the economic and financial policies which their governments will pledge themselves to support.

What I have just read completes the more formal comments which I prepared in Washington after I had read the two papers by Messrs. Heatherington and Willis. I shall now make some impromptu remarks on the comments made by the Chairman and by Mr. Mikesell.

I agree that a number of types of convertibility can easily be identified. However, the type of convertibility is not what I consider important; indeed, it will vary from country to country depending on circumstances. The ideal or essence of convertibility can be easily stated. It comprises the freedom of both residents and non-residents of a given country to make any international payment at any time for any purposes, whether on current or on capital account. That sort of convertibility does exist today in countries such as the United States, Canada, and Mexico and it exists in Switzerland so far as payments to and from the dollar area are concerned.

As Mr. Heatherington observed, there are a number of special problems such as fluctuating rates, exchange rate changes, and multiple exchange rates, which may have to be dealt with in connection with the kind of convertibility which individual countries wish to put into effect. These problems are in my view easily surmounted within the framework of convertibility. For example, take fluctuating rates. The pros and cons of fluctuating exchange rates can be debated for hours; indeed, I have debated them myself for many hours. Some countries may decide, as Canada has decided, that a fluctuating rate at least temporarily must be accepted as part of the whole convertibility system. It may be that the United Kingdom will make this decision in the case of sterling. Certainly the International Monetary Fund can deal with a situation of this sort when the time comes. But I do not believe that either the Fund or the United States can undertake to require that a country such as the United Kingdom must have a fluctuating rate. Parenthetically, I should like to say to Mr. Heatherington that businessmen must recognize that exchange rate changes may be more frequent in any given period of widespread convertibility than in an equal period of widespread inconvertibility. Sometimes businessmen complain very bitterly, as they did in the recent case of the devaluation of the Mexican peso, when exchange rates are changed without warning. But the simple fact is that such changes are a part of the price which has to be paid for convertibility and, whether we like it or not, the alternative is likely to be inconvertibility.

The International Monetary Fund is in a position to assist countries in establishing and maintaining convertibility on a major scale. The Fund has assisted both Peru and Mexico through stand-by arrangements. Last week the Fund provided $25 million to Colombia in order to assist Colombia in maintaining a very substantial degree of *de facto* convertibility which has characterized the Colombian ex-

change system. Finally, the Fund can arrange substantial stand-by agreements with the United Kingdom and European countries if these are needed to assist these countries in establishing currency convertibility.

Mr. Mikesell asked if I would comment on the work being done in the OEEC in connection with convertibility. It can be said very briefly that the various meetings in the OEEC on this subject are concerned with several aspects of the movement toward convertibility. One is the effort to increase dollar liberalization, which may be emphasized during 1955. A second is to work out plans for a European Fund to supplant the European Payments Union. This Fund might have around $600 miilion in convertible assets with which to make short-term advances much in the same way as does the IMF. Thirdly, the OEEC is working on a number of details which might need to be taken care of in connection with a general move to convertibility.

REVENUE BOND FINANCING—LEGAL, OPERATING, AND ECONOMIC ASPECTS

LEGAL ASPECTS OF REVENUE BOND FINANCING*

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A REVENUE BOND, as that term is commonly used in investment banking circles, is any type of security issued by a state or political subdivision or agency of a state which is payable solely from a specially pledged revenue and which does not constitute a general obligation of the issuing body. There is one exception to this definition and that is the special assessment bond, by which I mean a bond payable solely out of special assessments levied upon property deemed to be specially benefited by the construction of the improvement. Included within the definition, however, would be bonds payable solely from the revenues of a public utility or from a special tax, such as an income tax, gasoline tax, tobacco tax, etc. It will be observed, therefore, that when we speak of revenue bonds we mean a wide variety of securities, but all of these securities have two factors in common: first, they are issued for public purposes by a state or some political subdivision or agency of a state, and, second, the full faith and credit of the issuer is not pledged for their payment. For this purpose a territory is also considered to be a state and, accordingly, the term "revenue bonds" may include obligations issued by a territory or agency of a territory. In considering the legal aspects of revenue bond financing, I think that a convenient approach would be to examine the subject from the point of view of the municipal bond attorney and, perhaps, the starting point should be to point out the role of the municipal bond attorney in state and municipal financing.

The practice of submitting issues of state and municipal bonds to an independent attorney of outstanding reputation in the law of

* This paper by David M. Wood, and the following two papers by C. J. Kushell, Jr. and George W. Mitchell, with discussion by Raymond E. Hengren, were presented at a meeting of the American Finance Association in Detroit on December 29, 1954. The program was under the chairmanship of Julien H. Collins of Julien Collins & Company, Chicago.

municipal finance began as a result of the widespread defaults which occurred in the 1870's and early 1880's upon municipal bonds which were issued in aid of the construction of railroads. Many of these bond issues were held void by the courts. These defaults and adverse court decisions had such an adverse effect upon municipal credit that it became very difficult to sell municipal bonds. In order to assure investors in public securities that the bonds were at least legally issued, the bond dealers began the practice of employing lawyers of outstanding reputation in the field of municipal law and of the highest reputation for integrity to examine the proceedings under which the bonds were authorized to be issued and to render an opinion as to the validity of the bonds. The practice has continued and today we find very few issues of state and municipal securities sold without the approval of an independent municipal bond attorney.

Now let us consider the work of the municipal bond attorney in passing upon the validity of any issue of revenue bonds. The attorney is presented with a certified transcript of proceedings which have been taken by a state or state agency authorizing the issuance of bonds to finance some public enterprise. The attorney first examines this transcript to determine the character of the issuer, the purpose for which the bonds are proposed to be issued, and the character of the security proposed to be sold. He is particularly interested in the purpose of the issue because under state and federal constitutions bonds can be issued only for public purposes. Unless some provision of the federal Constitution is violated, the states may determine for themselves what shall constitute public purposes within their respective borders. But the bond attorney must first satisfy himself that the purpose for which the bonds are proposed to be issued is recognized as a public purpose in that state.

He is interested in the character of the issuer because, while the purpose may be a public purpose, it may not be a proper purpose for every type of issuer within that state. In addition to being a public purpose, it must also constitute a corporate purpose of that particular issuer. For instance, the Supreme Court of Florida has held that schools are not a corporate purpose for a city. In that state schools are maintained by independent school districts. Similarly, certain purposes may be state purposes as distinguished from local purposes.

Next, the attorney gives some consideration to the character of the security proposed to be issued. Is it contemplated that the bonds

will be merely liens upon the revenues of a public utility? Or are they also intended to be secured by liens or mortgages upon the physical properties of the utility? In some states it is unlawful to attempt to secure the bonds by liens upon the physical properties of a utility. In others this may be done if the lien applies only to property to be acquired out of the proceeds of the bonds.

With this general background of the proposed transaction the attorney next looks for a statute authorizing that particular issuer to issue the bonds. With rare exceptions, which time will not permit me to discuss, the power of a municipality or other political subdivision of a state to issue bonds is never implied but must be expressly conferred by an act of the legislature. If the attorney finds such an act his next step is to determine whether the act is constitutional. He must examine the constitution of the state to satisfy himself that the legislature had the power to enact that statute and that the bonds proposed to be issued under it will not violate any constitutional limitation. Assuming he is able to give the act a clean bill of health, in many instances he must examine the journals of the legislature to determine whether the act was passed in the manner prescribed by the constitution. In about half the states in the union the enrolled act is not conclusive but its validity may be impeached by demonstrating, by reference to the legislative journals, that it was not passed in conformity with the constitutional requirements.

In making all of these legal determinations the attorney must give consideration to the decisions of the courts of the state in which the issuer is located. This great mass of case law, which is ordinarily called the common law of the state, of course must be conformed to in the issuance of the bonds and no bond attorney is competent to make any of the determinations, above referred to, without a thorough knowledge of the common law of the state in which the issuer of the bonds is located.

When all of this work has been done, the attorney has then satisfied himself merely that the issuer of the proposed bond issue has valid statutory authority for the issuance of that type of security to finance the project which it has in mind. The next questions are: Has the issuer taken proceedings for the issuance of the bonds in compliance with the constitutional and statutory directions, and do these proceedings provide for pledges of revenues or liens upon property, or both, adequate to secure the payment of the principal and interest of the bonds? Do the terms of the bonds conform to all

constitutional and statutory limitations? Is proper machinery provided for the collection and application of the revenues to the payment of the principal and interest of the bonds and are proper remedies available to the bondholder in the event of a default upon the securities?

The procedure of the governing body of the issuer of revenue bonds in authorizing the issuance of the bonds is substantially the same as would be required in the case of an issue of general obligation bonds which do not have to be submitted to the electorate for approval. The ordinances or resolutions adopted in this connection, however, differ materially from the ordinance or resolution which would be adopted in the case of general obligation financing. It is necessary, either in a resolution authorizing the bonds, or in a trust indenture made with some responsible banking institution, to set up the machinery for the application of the proceeds of the bonds to the purpose for which the bonds were issued and for the collection and application of the revenues pledged for the payment of the principal and interest of the bonds. If the bonds are being issued by a municipality, subject to a constitutional limitation upon the amount of indebtedness that may be incurred, some legal problems exist which must be taken into consideration in drafting these documents. While the courts, with very few exceptions, have taken the position that revenue bonds are not subject to constitutional limitations of indebtedness, nevertheless there are marked differences in the decisions of the highest courts of the various states upon this subject. There are differences in the attitude of the courts with reference to the so-called "special fund doctrine." We lawyers commonly refer to one line of decisions as the "expanded special fund doctrine" and to the other as the "limited special fund doctrine." Under the expanded special fund doctrine a municipality may pledge existing special revenues and existing properties for the payment of the principal and interest of a new issue of revenue bonds. Under the limited special fund doctrine the municipality may pledge only the properties brought into existence by the issuance of the revenue bonds and the revenues produced by those properties. There are, however, many refinements upon both doctrines. In some states in which the expanded special fund doctrine prevails, while existing revenues may be pledged, no liens may be placed upon existing properties. It may, however, be possible to impose a lien upon the properties brought into existence through the issuance of the bonds to secure the payment of that issue. In other states no lien may be placed upon any property, including property constructed or acquired out

of the proceeds of the bonds. All of these legal limitations must be taken into consideration by the attorney in drafting or passing upon the proceedings to authorize the bond issue which he has under examination.

Assuming that the resolution or indenture conforms to these legal limitations, the bond attorney then gives consideration to the mechanics provided in the resolution or the indenture for the collection and application of the pledged revenues. As the project proposed to be financed must be operated in order to produce the revenues to which the bondholder will look for payment of his security, it is essential that adequate provision be made for payment into an operating fund of such amount, annually, as will be necessary to meet the operating expenses of the project, but, obviously, there must be some check upon operating expenses, otherwise the amount of the net revenues may be seriously reduced. This is usually provided for by requiring the preparation of an annual budget of expenses. Usually the proceedings require the preparation of this budget in consultation with an independent engineer, and, if the engineer does not approve the budget, it is commonly provided that it may not be finally adopted except after a public hearing, held upon notice to the public and to the bondholders, at which hearing the engineer's objections to the budget are disclosed and at which time any bondholder may voice his objections to the budget. It is sometimes provided that the budget may not be adopted without the approval of the consulting engineer, but many attorneys question the power of a public agency to delegate so completely its discretionary powers to a private individual.

After payment of the proper amounts into the operating fund, the proceedings ordinarily provide for the payment of the balance of the revenues into the debt service fund, in which there are usually set up an interest account, a bond retirement account, and a sinking fund account. Out of the interest account the interest on the bonds will be paid. Serial bonds as they mature will be paid out of the bond retirement account, and into the sinking fund account will be paid the amounts required for the amortization of term bonds at their maturity. In some cases all of the net revenues are not paid into the debt service fund but only stipulated amounts thereof, and any balance of revenues remaining thereafter are paid into a surplus fund which may be expended by the issuer for the redemption of the bonds, for the making of improvements to the project, or for any other public purpose.

If the bonds are proposed to be issued for the purpose of con-

structing a new project, the proceedings usually provide for the setting up of a construction fund and for the expenditure of these moneys in the construction of the project upon the orders of the issuing body, supported by certificates of approval signed by the consulting engineer. Quite commonly interest during the construction period and for one year thereafter is treated as a construction item and is paid out of the construction fund.

As the bondholder expects to be paid only out of the revenues produced by the project, he is vitally interested in being assured that the physical properties of the project will always be kept adequately insured in responsible insurance companies, and in appropriate cases use and occupancy insurance should be obtained to cover the loss of revenues which would be caused by damage to the project, and, in order that the bondholder may also be assured that such insurance will always be obtained in the proper amounts and that the revenues of the project will be applied in the manner specified in the resolution or indenture, provision is usually made for annual audit of the affairs of the project by an independent auditor whose reports are required to be made public and available to the bondholders upon request.

One of the most difficult problems which arises in the drafting of these proceedings is the manner in which the project may be enlarged or improved. As they are rarely static projects some provision must be made to meet this contingency, and, as a practical matter, that means some provision must be made to authorize the issuance of additional bonds ranking on a parity with the bonds originally issued. Unlimited power to issue such bonds could result in appreciable dilution of the security of the holders of the outstanding bonds and, therefore, some limitations must be placed upon the power to issue these additional bonds. Usually this is accomplished by requiring the issuance of additional bonds to conform to an earnings test.[f] The most common of such tests is that the net earnings of the project in each of the last two complete fiscal years amounted to a stipulated percentage of the debt service requirements of all outstanding bonds, plus the debt service requirements of the proposed additional issue. This percentage varies, depending upon the nature of the project. In the case of stable projects, such as water plants, it may be as low as 120 per cent of the debt service requirements. In the case of projects subject to marked fluctuations in earnings, it may be as high as 150 per cent.

Because the resolution or indenture is intended to be operative

over a long period of years, and because no one can foresee all of the conditions which may exist during that period, the resolution or indenture ordinarily provides for its amendment with the consent of the holders of a stipulated principal amount of the outstanding bonds. It also defines the events of default on the part of the issuer in meeting its obligations under the resolution or indenture, and for the remedies which the bondholders may resort to in the event of any such default, and, finally, the resolution or indenture specifies the conditions under which the lien upon the pledged revenues and pledged properties, if there be any, may be released.

There are, of course, many other matters with which the bond attorney must concern himself in connection with the issuance of revenue bonds, depending upon the nature of the project intended to be financed. If the bonds are proposed to be issued for the construction or acquisition of a water system, it is not sufficient for the attorney to be satisfied that there is demand for water sufficient to produce the revenues necessary to pay the principal and interest of the bonds. He must also satisfy himself that the issuer has a legal right to a supply of water to meet this demand. He must make sure that there are no prior claims upon the water proposed to be taken by the issuer for distribution for domestic consumption. In some states where there are pre-emptions of water for irrigation or other purposes, this may present a difficult question of mixed law and fact which the attorney must work out in co-operation with the engineers. If the project is a bridge over navigable water he must satisfy himself that a federal permit has been obtained from the Secretary of the Army and that the plans and location of the bridge have received the approval of the Corps of Engineers of the United States Army. If the bridge is an interstate bridge he must satisfy himself that congressional legislation for its construction exists and that the right to maintain the bridge as a toll bridge runs for a sufficient period of time to permit of the amortization of the bonds. If the project is a hydroelectric plant he must satisfy himself that a license has been obtained from the Federal Power Commission. If the project is located near a state boundary there is always the possibility that it extends into one or more neighboring states, which presents many complications. In some instances such problems can only be solved by an interstate compact which may also require the approval of Congress. In some instances the project will require the co-operation of other governmental units, including the state and the federal government. The power of those co-operating agencies to

enter into the co-operation agreements must be carefully considered. It is impossible in a short address to go into details with respect to all of the problems which may arise by reasons of the nature of the project proposed to be financed out of the proceeds of the revenue bonds, but this brief summary will indicate that an attorney approving an issue of revenue bonds must concern himself with many things other than the act under which the bonds are authorized to be issued. Indeed, some of these problems may be the most difficult ones with which the municipal bond attorney has to contend, and he may have to devote far more time to their solution than he is required to devote to the determination of the question of the validity of the bonds.

If all of these matters are disposed of to the satisfaction of the bond attorney there remains only the problems involved in the sale of the bonds. The sale of revenue bonds is sometimes a little more complicated than the sale of general obligation bonds. Very frequently, simultaneously with the issuance of the bonds, some property must be acquired, in which event the attorney must satisfy himself that all mortgages, liens, or any other claims upon this property are simultaneously extinguished. If any such property is to be acquired, usually the attorney will have provided in the resolution or indenture authorizing the issuance of the bonds exactly what steps must be taken at the time of delivery of the revenue bonds in order to bring about the extinguishment of mortgages, liens, or other private rights with reference to the property, so that at the time the bonds are issued the issuer will acquire a good and marketable title to these properties free and clear of all encumbrances. Usually the bond attorney does not pass upon the title to these properties but requires that a title opinion or title insurance policy, satisfactory to him, be delivered at the time of the delivery of the revenue bonds.

In a brief address of this sort it is possible only to touch upon the high spots of the legal aspects of revenue bond financing. There are many varieties of special revenues which may be pledged for the payment of revenue bonds. Therefore, there can be many departures from the procedure which I have outlined, but I believe that this brief exposition of the legal aspects of revenue bond financing is generally applicable to practically every type of revenue bond issue.

OPERATING ASPECTS OF REVENUE BOND FINANCING

C. J. KUSHELL, JR.
The Port of New York Authority

THE SUBJECT ASSIGNED is too broad for one with experience with only one Authority; therefore, my remarks will be centered around the specific experience of The Port of New York Authority in the thirty-four years of its existence, and I will only hope that the things I can tell you about "operating aspects of revenue bond financing" will have general application to all revenue bonds.

The Port of New York–New Jersey is a major crossroad of the world's transportation. One in every ten families in our metropolitan region earns its living through the transportation operations of this Port District. The vital streams of freight and commerce must flow swiftly, certainly, and economically if this Port District is to maintain and expand its economic welfare.

The problems of applying a regional approach to an economic area involving two states and some 230 municipalities in an area of 25 miles around the Statue of Liberty had been of great concern to our forefathers for a long number of years. It was apparent that if this area was to prosper, some new form of government must be created to work out these problems. It was apparent that this new form must involve an interstate compact.

In 1921, the states of New York and New Jersey entered into just such a compact or treaty. It was noteworthy because it was the first time that any of the states had ever used the provisions of the interstate compact clause of the Constitution in connection with their creation of an interstate agency; and also because this interstate agency which New York and New Jersey created was, for this country at least, a brand new type of public agency, the first authority ever organized in the United States.

Now just what is an authority, what is its particular role in the catalogue of government organizations, and how is it supposed to operate?

An authority is a public corporation set up outside of the regular framework of federal, state, or local government departments, commissions, or bureaus and freed from the procedures and restrictions

or routine government operations in order that it may bring the best techniques of private management to the operation of self-supporting or revenue-producing public enterprises. There are several key phrases in that definition. Note that though an authority is a public corporation, it has no power to tax or assess and must support itself out of the revenues of the public works which it constructs or operates. Note also that the concept of operating with the efficiency of good corporate management carries with it the assumption that considerations of party politics cannot be tolerated in its operation or management.

Accordingly, The Port of New York Authority is a non-political, self-supporting public agency which endeavors to apply the best principles and procedures of business management to the financing and operation of the public transportation and terminal facilities required for the continued development of the great port area of New York and northern New Jersey.

By way of background for the more interesting subject of how we operate, how we run our business, and the standards and criteria of our management, I will try to summarize what we have accomplished over the past thirty-three years.

The Port Authority was created by the states of New York and New Jersey thirty-three years ago with the pledge, to use the words of the Port Compact itself, of "faithful cooperation in the future planning and development of the Port of New York. . . . It represents their formal acceptance of the obvious fact that the whole economy of the metropolitan region around the Port of New York is dependent upon our harbor, and upon the facilities of transportation that have been developed around the harbor and that are required now and will be required in the future for its continued prosperity.

The two states agreed, to use the language of their own Compact again, that "the future development of such terminal, transportation and other facilities of commerce will require the expenditure of large sums of money and the cordial cooperation of the States of New York and New Jersey in the encouragement of the investment of capital, and in the formulation and execution of the necessary physical plans." They directed the Port Authority to go forward with the development of their port facilities, bridges, tunnels, waterfront terminals, airports, and consolidated public terminals for the handling of rail and truck freight. They directed it, furthermore, to go forward with a program for the promotion and development of the

commerce of the Port, and to represent the Port before the Congress and the federal transportation agencies.

Since that time the Port Authority has financed and built or purchased some seventeen port, terminal, and transportation facilities in this metropolitan area. They represent an investment of about $525,000,000, much of it at different dollar values of ten, fifteen, and twenty years ago.

The facilities themselves include the three well-known Trans-Hudson vehicular crossings, the Holland and Lincoln Tunnels, and the George Washington Bridge; the three Staten Island bridges joining that section of New York with the New Jersey mainland; the four metropolitan airports, New York International, La Guardia, Newark, and Teterboro; a railroad freight terminal in Manhattan, over which is built the sixteen-story Port Authority Building; the world's two largest Union Motor Truck Terminals; the new Bus Terminal in the Times Square area; a Grain Terminal and piers in Brooklyn, and the waterfront of Port Newark, a modern seaport that is handling an ever increasing portion of New York harbor's waterborne commerce. The latest step is the development of the Hoboken waterfront under an agreement with the Maritime Administration and the city of Hoboken.

The Port Compact also directs us to promote and develop the commerce of this great metropolitan area of northern New Jersey and New York. Of late we have been devoting about $1,000,000 a year to this work of port promotion, which is so critically important to everyone who does business or holds a job in this area. We represent the Port of New York before such regulatory bodies as the Interstate Commerce Commission, the Civil Aeronautics Board, and the Federal Maritime Board. We maintain branch offices in Chicago, Washington, Cleveland, and Rio de Janeiro to encourage the movement of commerce through the metropolitan area of northern New Jersey and New York.

In the course of our development and out of our experience, we have, as you would expect, developed standards and principles of management which we believe are basic to the decent and successful operation of a public authority. An English student of public administration has said that the public authority "is the most important invention in political organization and constitutional practice in our time." If that is so then certainly, as I indicated at the outset, the most important aspects of this new tool of democratic government is its ability to use the best procedures and methods

of modern business management in the administration of large public enterprises. An authority is designed to put revenue producing public facilities on their own feet and on their own responsibility; to free them from political interference, bureaucracy and red tape. The public has a right to look to an authority for initiative and business imagination, for efficiency in its operations, for enterprise and long-range planning in the development of public projects.

This test of management, the administrative standards of a well-managed private corporation, is the test that should be applied to the responsibilities and duties of the Board of Commissioners of a public authority, to its administrative staff, its financial management, its employee relations, and all other management policies.

Your knowledge of the structure of private corporate management would make our organization chart a familiar pattern. The Commissioners of the Port Authority function as a Board of Directors. The Executive Director has the same normal responsibilities of those of the president of a private corporation. We have staff and line departments whose functions correspond to those of a large corporation whose products fall into different categories. Thus, our so-called line departments are headed by directors who would be the vice-presidents of a private corporation and who carry the responsibility for the operations of bridges and tunnels, airports, piers, and terminals. Such staff departments as those of finance, engineering, purchasing, and personnel provide the general services which are required by the four line departments. The only Port Authority department that you would have difficulty fitting into a corporate organization chart would be that of Port Development, which carries the work of developing and promoting the commerce and business of the port area, as well as carrying on the long-range planning.

The character and responsibilities of the Board of Commissioners are about the same as those of corporate directors. Both types of directors are responsible to their stockholders. The only difference is that all of the people in the port district are the "stockholders" of the Port Authority. Selection as a director of a private corporation is a tribute by the stockholders to the integrity, ability, and experience of the individual. The same qualifications should be expected in the selection of a Commissioner-Director of a public corporation. And since all the Port District people are the "stockholders," the appointment is also one of outstanding public honor.

Our Compact provides that the Commissioners of the Port Authority shall serve without compensation. This provision reflects the necessity of public service by responsible citizens as one of the

basic assumptions of democratic government. It has brought to our Board a directorate which in quality and capacity can be matched on the boards of only a few great American corporations. Among the Commissioners of the Port Authority whose names will be particularly familiar to you, as financial men and teachers of finance, are those of our chairman, Howard S. Cullman, who is a director of the Bankers Trust Company and the Prudential Insurance Company, Bayard F. Pope, chairman of the Board of the Marine Midland Trust Company, S. Sloan Colt, president of the Bankers Trust Company, and Horace K. Corbin, president of the Fidelity Union Trust Company of Newark and also a director of the Prudential Insurance Company.

So, too, as I have indicated, the administrative staff and employees of a sound public authority should be selected and serve without regard to political affiliation. If an authority is to meet standards of good business management, as the public has the right to expect, it cannot allow political influence to play any part in its management or internal affairs. No private corporation could survive if its personnel were to be selected or its business conducted on the basis of political preference. That is an accepted, and in the sense of party responsibility, an altogether proper standard for the regular departmental units of our democratic government. But it is the death-knell of sound authority management. As the fellow said as he watched two trains speeding down the track toward each other—"it's a helluva way to run a railroad."

The policies of recruitment of the adminstrative and professional staff which are followed by any successful private corporation are equally applicable to a public authority. Its effective operation is dependent upon obtaining the best talent available, paying salaries which are to some degree comparable to those of private industry, and assuring a corporate atmosphere—an atmosphere of integrity, confidence, and enthusiasm—which will attract our ablest young men and women to a career in public enterprise and which will encourage them to continue in it.

So much for a general background of what we are and what we do. Your chairman asked me to address myself more to the "Operating Aspects of Revenue Bond Financing." We believe that in the application of sound principles of financing, corporate accounting, and budgeting to the operations of a public agency, the Port Authority has blazed a trail in financial management that cannot be matched by any other public agency in the country.

An exacting standard of cost accounting and budgeting for a pub-

lic corporation such as ours is made necessary by the nature of its operations and by the fact that we have no power to pledge the credit of either state. Generally the projects to which a public corporation is directed are financially marginal. If profits were readily apparent in the operation of airports, piers, bus terminals, or similar facilities, we would have no need for a Port Authority. Yet, at the same time, having no taxing power, we must be self-supporting and must rely upon our own credit. We have, therefore, a critical need for effective control over costs and expenditures, and must depend heavily upon the traffic lights and warning signals of our system of budgeting and controls.

Our accounting system identifies all elements of cost, whether direct or indirect, operational or capital, and then charges these costs properly to each individual operating unit.

An industry must know what portion of its total capital cost must be charged off annually. So, too, the public corporation must know its fixed charges and avoid the tendency to forget them. I might observe that this tendency of the government accountant to forget capital costs might be described as an occupational amnesia. If, in addition to the indirect operational charges, you were to ask the director of finance of a large city whether or not the net revenues he reported for the city's airports were before or after fixed charges, he would simply regard you as impertinent.

In business administration today, budget control is regarded as a state of mind that should pervade the organization from a foreman's level to top management. In the Port Authority we use performance budgeting. Individual units and divisions of our organization responsible for performance of a job are held to budgetary responsibility for that job. Our accounting system is integrated with our budgeting so that controls are available at all times at the job performance level.

Gross revenues from our facilities will approximate $64,000,000 in 1954 as compared with $18,000,000 ten years ago. Net operating revenues available for debt service will be about $35,000,000 as against $13,000,000 ten years ago. Debt service earned in 1954 is estimated at 2.60 compared with 1.77 times in 1944. These are the figures that set the stages of the continuing work of the Port Authority toward the fulfilment of its program of port development in the years ahead of us.

We have not always enjoyed our present financial condition. A

brief history of our financial program over the years, including our mistakes, may be of interest to you and provide a perspective for the remarks of Mr. Wood and Mr. Mitchell.

First Construction Period, 1926–33

The first of the Port Authority's facilities was financed back in 1926, at which time the Series A, 4½ per cent bonds were issued at a net average interest cost of 4.76 per cent for the construction of the Arthur Kill bridges connecting Staten Island and New Jersey. Remember, revenue bonds were brand-new financing vehicles at that time and we really had no credit. In order to allow us to sell revenue bonds at all, the two states agreed to advance the sum of $2,000,000 each of so-called "risk capital" toward the total construction of ($18,000,000) the bridges. These advances were, in effect, a junior lien to the bonds, bearing no interest, and required no amortization until after the publicly issued bonds had been repaid in full. Subsequently, after having received the same type of "risk capital" from the two states, the Port Authority sold twenty- to twenty-five-year serial bonds for the financing of the George Washington Bridge and the Bayonne Bridge, the third bridge connecting Staten Island and New Jersey.

All of these early state advances, totaling some $18,000,000, have long been repaid. Each of these original bond issues was secured by a pledge only of the revenues of the facility it financed and each issue required large separate sinking funds and reserve payments. It was soon realized that certain facilities were not being developed at the rate anticipated and that no provision had been made in the initial financing for the pooling of revenues required to carry the lower revenue-producing projects. Because the revenue bond was a new type of financing vehicle, the Port Authority and the investment fraternity must share the responsibility for not seeing farther ahead. At any rate, we were able to extricate ourselves from these early difficulties when the legislatures of both states permitted us to overcome this deficiency by creating the General Reserve Fund in 1931. This legislation allowed the Authority to pool its revenues, to build a reserve fund equal to 10 per cent of the outstanding bonds, and to apply these reserves as additional security for bonds issued by the Port Authority.

Up to this point, we now have a picture of several separate series of bonds, originally supported only by the earnings of the individual facility.

Refunding Program, 1934–41

With the way cleared by the 1931 legislation, the second phase in the evolution of Port Authority financing was marked by the establishment and issuance of General and Refunding Bonds beginning in 1935. The economic depression of the early 1930's had retarded the development of the Port Authority's revenue potential, and the relatively short-term serial maturities of the original issues then outstanding were beginning to strain the Port Authority's financial resources. As a result, the General and Refunding Bond Resolution was primarily a vehicle for refunding the Series A to E Bonds. As the refunding program developed over this period of years to 1941, all of the original construction bonds were refunded and unified by the General and Refunding Bonds, over-all interest costs on funded debt were substantially reduced, maturity schedules were rearranged and extended to a more realistic basis, and the surplus revenues began to flow into the General Reserve Fund upon which the Port Authority was fast building a substantial credit base.

War Years, 1941–46

The original refunding plan, completed in 1941, achieved the then financial objectives of the Authority. The war period was marked financially by a continuation of the secondary refunding program begun in 1940. As each series of General and Refunding Bonds became callable, it was refunded into a lower coupon. The fact that we were then in a managed money market was beneficial to the Authority. This type of operation culminated in 1946 with the issuance of $18,757,000 par value of General and Refunding, Eleventh Series Bonds, due 40 years, bearing interest at the rate of 1¼ per cent, which were sold at a net average interest cost of 1.36 per cent. This was probably the lowest long-term rate ever achieved by any Authority for a revenue bond.

Postwar Expansion from 1946

The General and Refunding Bond Resolution by this time was definitely recognized as obsolete. Toward the end of the war and directly thereafter it was decided to proceed with the construction and financing of truck terminals in New York City and Newark and a bus terminal in midtown Manhattan. The restrictions imposed on the issuance of General and Refunding Bonds by the Basic Resolution precluded the financing of any new construction project through the medium of General and Refunding Bonds. Consequently, the Port Authority had to provide for the capital requirements

of these facilities by the issuance of so-called convertible bonds, which were later exchanged for General and Refunding Bonds, providing certain earnings tests were met prior to such exchange.

Probably the most important financial consideration in the post-war expansion period was the acquisition of the New York City and Newark, New Jersey, airports and Port Newark in June, 1947, and March, 1948, respectively. Here again, as with the truck terminals and the bus terminal, the acquisition and construction of the new facilities was entirely beyond the possibility of financing directly with General and Refunding Bonds. Unlike the truck terminals and the bus terminal, however, the construction in prospect for the air terminals was of such magnitude and complexity that it did not lend itself to financing through the medium of the convertible bond. Accordingly, two entirely new bond resolutions were adopted authorizing the issuance of Air Terminal and Marine Terminal Bonds. The terms and conditions of each of these new bond resolutions were very similar to those of the General and Refunding Bond Basic Resolution.

Simplified Debt Structure

Although the earnings after debt service of the different groups of facilities were pooled in the General Reserve Fund, the unification of debt, accomplished for awhile by the General and Refunding Bonds, was ended with the introduction in 1945 of the Terminal Bonds, Series J, issued to finance the truck terminals and later complicated in 1948 by the issuance of Air Terminal and Marine Terminal Bonds. As a result, the debt structure of the Port Authority had become exceedingly complex and, in effect, had reverted to the original concept in modified form of financing not each project, but a group of facilities by different types of bonds, i.e., General and Refunding, Air Terminal, and Marine Terminal Bonds. The investor was confused by this complexity and the necessity of explaining the technical interrelations between the various sources of revenues pledged to the General and Refunding, Air Terminal and Marine Terminal Bonds undoubtedly served to reduce marketability and increase the cost of over-all borrowing.

This condition lead the Port Authority to its latest financing step, the adoption of a Consolidated Bond Resolution, which is now the major vehicle for Port Authority financing. This first action was taken through the sale of a $35,000,000 issue of Consolidated Bonds in December, 1952.

The Consolidated Bond is now available for any lawful purpose, provided only that it is a purpose which permits the pledge of the

General Reserve Fund as security for the bonds. This condition, coupled with the covenant to discontinue the issuance of bonds of the older types presently outstanding, made the new Consolidated Bond the major vehicle for Port Authority financing from then on. Furthermore, the present complex bond structure of the Port Authority will become simplified and unified into one type of bond in the future.

Another advantage of the Consolidated Bond is the flexibility achieved in arranging debt service on a level basis for future years. Each of our older bond resolutions requires that the total amount of interest and mandatory amortization on each series of bonds should be the same as for any other year. Since the Port Authority had purchased in the open market or called for redemption over $139,000,000 of its bonds during the postwar period in anticipation of future mandatory amortization or sinking fund requirements, an irregular pattern of over-all debt service on the then outstanding bonds had developed. As long as the older bond resolutions were used, it was impossible to iron out the peaks and valleys in the annual debt service requirement for future years. The Consolidated Bond Resolution eliminates this difficulty. The Port Authority can and already has in the last three years leveled out the schedule of retirement of existing debt. Under the Consolidated Bond Resolution, we have eliminated another difficulty involving the issuance of short-term notes for temporary financing. Quite frequently, sound financial management requires the use of temporary financing, particularly in anticipation of a change in market conditions more favorable to long-term financing. We were limited in this respect under the old bond resolutions, but the Consolidated Bond now provides for the issuance of short-term notes which, for purposes of computing the earnings test, can be converted to a thirty-year basis, up to an amount not exceeding 5 per cent of all bonds and short-term notes outstanding.

The Port Authority has placed upon itself substantial restrictions under the performance of the Consolidated Bond Resolution. Additional bonds may be issued provided the net revenues of the Authority meet or exceed the maximum prospective debt service by a prescribed margin of 1.3 times. The one exception reserved to the Port Authority was ability to issue Consolidated Bonds for refunding of all the present types of bonds outstanding without an earnings test. This right is reserved on the basis that once the bonds have been issued under an earnings test and the debt is not increased, the Port Authority should be able to refund its obligations without an earnings test.

Security for Consolidated Bonds

The Consolidated Bond Resolution provides that the new bonds will be secured by a first lien on the net revenues of all existing facilities subject, of course, to the existing liens in favor of the General and Refunding, Air Terminal, and Marine Terminal Bonds. The effect of this provision, coupled with the covenant prohibiting the Port Authority from issuing any more bonds of the old issues presently outstanding, is to assure the Consolidated Bond of an ultimate first lien on the revenues of all the existing facilities. According to the records, the earning power of the facilities operated by the Port Authority has been demonstrated over the years beyond doubt as to its adequacy and growth potential. An example of the last six years will bear out this statement. On December 31, 1948, the Port Authority's investment in facilities was $292,000,000 and the total bonds outstanding were $234,000,000. On December 31, 1954, the Port Authority's investment in facilities will be about $525,000,000 and its bonds outstanding will total about $247,000,000. Thus in this six-year period you will note an increase in investment of $233,000,000 with an increase of only $13,000,000 in outstanding debt. Another measurement is our earnings against debt service, which averaged 2.50 times over the six-year period.

In addition to the security of the earnings, the Consolidated Bonds are further secured equally and ratably by the General Reserve Fund. In 1931 the Authority was directed to pool all of its surplus revenues from its terminal and transportation facilities and to apply the surplus to the establishment and maintenance of a General Reserve Fund equal to one-tenth of the par value of all of its outstanding obligations. As a matter of interest, at the close of 1954, the General Reserve Fund will amount to $24,674,300 equivalent to 10 per cent of the bonds outstanding. This General Reserve has been maintained at 10 per cent ever since 1946.

The Consolidated Bonds are further secured by the Consolidated Bond Reserve Fund established by the new bond resolution as additional security for the holders of Consolidated Bonds. This reserve fund is a counterpart of the special reserve funds created for the benefit of the old bonds now outstanding. Once the old issues are retired, the balance of all net revenues pledged as security for the Consolidated Bonds will be paid into the Consolidated Bond Reserve Fund.

In 1947, on the eve of embarking on Air Terminal and Marine Terminal financing, it seemed advisable to the Port Authority to

strengthen the provisions of the General Reserve Fund and to make the new bonds more attractive to investors. Consequently, the Board established a policy that the Port Authority would maintain the General and Special Reserve Funds in an amount equal to the next two years' debt service on bonds for which the General Reserve Fund was pledged as security and that said reserves would be held in cash or invested only in obligations of the United States. Very few authorities or municipalities maintain such a large debt service reserve as additional security for their revenue bonds.

Naturally, the investor looks carefully to the source of revenue and insists that a rate covenant be included in the Bond Resolution pledging the Authority to maintain its charges for the use of its facilities at a rate sufficient to meet at least operating expenses and debt service on all its outstanding bonds. The states of New York and New Jersey adopted concurrent legislation in 1931 in which they covenanted with each other and with the holders of bonds issued for bridges and tunnels that they would not impair the Port Authority's power to establish, levy, and collect tolls upon bridges and tunnels. In 1947, the two states similarly agreed with each other that they would not impair the power of the Port Authority to establish, levy, and collect tolls upon any of its facilities as long as any bonds issued for Air Terminal purposes remain outstanding. Without such covenants, the cost of financing the two states' program of public terminal and transportation development in the Port District would be increased considerably or indeed might not be practical at all.

In addition, the Port Authority has itself covenanted in the new Consolidated Bond Resolution to establish and collect flight fees, wharfage, dockage, rents, tolls, and other charges on facilities, the net revenues of which are pledged as security for Consolidated Bonds sufficient to provide net revenues at all times equal to the debt services of all Consolidated Bonds.

I said the Port Authority would have $246,743,000, in outstanding bonds at the end of 1954. The makeup of this debt is as follows:

General and Refunding Bonds	$92,350,000
Air Terminal Bonds	67,384,000
Marine Terminal Bonds	9,009,000
General Reserve Fund Notes	3,000,000
Consolidated Bonds	75,000,000

Inasmuch as Consolidated Bonds will be the sole form of future financing, it can readily be seen that each year will bring a substan-

tial reduction in the prior lien debt. We cannot be sure when all of the prior lien debt will be liquidated in the future. However, whenever the opportunity arises to refund or eliminate this debt at satisfactory rates, we shall do so.

Financial Promotion

One of the important phases of the operating aspects of revenue bond financing is financial promotion. The best way to instil and retain interest in the securities of an Authority is a widespread and sustained program designed to acquaint the investing public and the responsible officials of fiduciary institutions of the Authority's plans and accomplishments. Bank examiners frequently complain about a bank's holdings of a specific revenue bond because of its lack of current operating data or other pertinent information. We do our best to make sure that complaint is never directed against us. The Port Authority has for a long time issued quarterly reports of operating results and monthly traffic statistics together with a letter of transmittal by the Treasurer highlighting significant items which is sent to a mailing list of some 1,600 banks, trust companies, insurance companies, investment dealers, and individuals. The Annual Financial Report, which is a separate document from the Port Authority's Annual Report, is mailed to an even broader investment list. These reports are also sent to the key financial newspapers and statistical services, and thus find their way to every investing institution in the country. Contrary to the practice of many Authorities, our policy is one of full disclosure and this policy is reflected in all of our reports.

One of the major responsibilities of our Treasurer is to conduct a continuous educational program among the municipal bond dealers, purchasers of securities for trust funds, pension funds, and insurance funds as well as other institutional buyers. The whole purpose is to broaden the market for Port Authority bonds. Plans for Port Authority impending financing are always discussed with the managers of the dealers' syndicates and, in return, the Port Authority receives expert advice on market conditions and other information concerning the issuance of our bonds. Dave Miralia of Halsey Stuart specifically complimented the Port Authority on the adequacy of our official statements in a speech before the Municipal Law Section of the American Bar Association in Chicago last August, describing these Official Statements as "models of excellence."

In addition, we go farther. The Treasurer and myself welcome

invitations to talk about the Port Authority at meetings of Municipal Bond Clubs in all of the major investing centers of the country. We frequently conduct investment dealers in our area on field trips to visit the Authority's different facilities in order to show them our physical operations and our high standards of maintenance. Considering the tremendous volume of new municipal issues being sold, this type of program becomes more important since a greater proportion of the informational and educational work must be carried on by the issuer rather than the dealer.

Future Financing

I have recited this financial history primarily to indicate the need for flexibility as well as to show you we have our house in order for the future. With the broad responsibility assigned to us under the 1921 Compact, you can readily see that our job is never done. In each of the broad transportation fields of vehicular crossings, air terminals, marine terminals, and inland terminals, technological change and growth continues. We are currently preparing a report on vehicular traffic problems jointly with the Triborough Bridge and Tunnel Authority that will be published next month. The study has taken the better part of the year and we will have spent almost $1,000,000 on consultant fees in order to develop a master plan on vehicular crossings for the foreseeable future. The specific projects under discussion will require a minimum of $500,000,000 in the next ten years.

We have a master plan for air terminal development. We anticipate an addition of two hundred million dollars will be required for these purposes in the next ten years. Additional sums will be required for marine and inland terminal purposes. It is readily apparent that the Port Authority will be in the market for capital funds each year in the foreseeable future. Our ability to raise these funds through revenue bonds will, I am sure, necessitate the continuation of the operating principles which have accounted for our progress in the last thirty-three years.

ECONOMIC ASPECTS OF REVENUE BOND FINANCING

GEORGE W. MITCHELL
Federal Reserve Bank of Chicago

STATE AND LOCAL borrowing and construction have been at record highs during 1954. New bond issues for capital purposes total more than $6.2 billion for the year. Local governments and their instrumentalities account for 55 per cent of this total; the state governments and their instrumentalities, including toll road authorities, the other 45 per cent.

TABLE 1

STATE AND LOCAL LONG-TERM NEW CAPITAL ISSUES IN 1954*

(amounts in millions of dollars)

	Amount	Per Cent
Total	$6,157.2	100.0
General obligation	2,760.5	(44.8)
Secured by unlimited, unspecified credit	2,450.7	39.7
Intitial pledge of specific taxes	132.8	2.2
Initial pledge of enterprise revenue	177.0	2.9
Non-guaranteed	3,396.8	(55.2)
Specific tax or appropriation from tax funds	545.8	8.9
Revenue bonds with collateral pledge of taxes or appropriations	104.9	1.7
Revenue bonds, collateral pledge of earnings of similar enterprises	110.5	1.8
Revenue bonds, "pure strain"	2,635.6	42.8

* Excludes territorial issues, obligations guaranteed by the U.S. government, special assessment bonds, non-capital issues (e.g., veterans' benefit issues, funding bonds), and refunding issues.

Source: Derived from monthly pink-sheet supplements to *The Bond Buyer* and weekly indexes to Moody's *Municipals and Governments Manual.*

Issues involving a direct pledge of full faith and credit of these governments come to about 45 per cent of the $6.2 billion total. Another 12 per cent are issues pledging specific taxes or appropriations or falling back on such sources in the event of failure of project earnings to measure up to expectations. The remaining 43 per cent, approximately $2.6 billion altogether, consists of revenue bonds dependent on enterprise earnings alone (see Table 1). A pure strain of the revenue bond device, thus, is in active use at the present time. Among the more important of the kinds of improvements financed through the issuance of revenue bonds are many of today's massive toll road and toll bridge undertakings and much of the new invest-

ment in local utility enterprises, conspicuously electric, water, sewage disposal, and transit facilities.

That the investment needs of the state and local governments not only are immense but are destined to grow markedly in coming years by now is commonplace. Partly, the job that confronts these units is one of making good the deciencies of plant that have been inherited from the past. More important, though, and more costly, will be the task of preparing for the growth in the demand for community services and facilities that will inevitably accompany the steady rise in population and income that we so confidently anticipate.

Public vs. Private Investment

Public investment, even when conspicuously labeled as "self-liquidating" or "pay-as-you-go," usually fails to excite the deference accorded private investment. The need for new public facilities often is recognized only tardily and, even then, grudgingly as if the investment it gives rise to were somehow an intrinsically wasteful form of expenditure. Why should this be so when savings used to build highways, water systems, or schools may very well be, in a real sense, every bit as desirably and productively employed as savings harnassed to build machine tools, a factory, or a fleet of diesel locomotives? The difference, when one exists, lies in the role that prices play in guiding private investment decisions: prices, on the one hand, that the services provided are expected to bring; and the prices, on the other hand, that determine the cost of the undertaking.

Capital formation is a risky business at best. Even when plans or programs are based on competent and thorough analysis, the mere lapse of time exposes each new undertaking to the possibility of a decline in general demand as well as to the contingency of a miscalculation due to technological innovation or to basic shifts in consumer attitudes toward consumption and the conventions of living.

Estimating the net yields from a given project involves substantial uncertainties that must be taken into account one way or another. For riskier private ventures only equity capital is used and expected returns are high. Under ordinary circumstances public ventures are less hazardous. Instead of stimulating demand or anticipating its growth, they usually come into being only as capacity falls short of the evident need for it and as the ability of users to

pay the necessary charges is well recognized. Loan capital is the major source of funds and it often is heavily buttressed by preferential tax treatment, general obligation credit, or the pledge of earnings from existing plant. In the complete absence or only moderate use of two of these security additives—general obligation credit and earnings of established facilities—there are important opportunities to use the same criteria for determining the amount and character of public capital formation as are used to guide private capital formation. The effect of the exemption from federal income taxes enjoyed by state and local debt, obviously, gives such public investment a very substantial advantage over private uses of savings.

Tax-Supported vs. Price-Supported Public Debt

It should be noted at the outset that there are certain types of public investment that do not lend themselves to guidance by criteria analogous to those directing capital formation in the private sector. Many services associated with the community's capital facilities fall into the area of general benefit; others have to do with income-redistributing welfare functions. In neither case is it practicable to use the price mechanism to direct investment. We would hardly expect to charge admittance to public buildings and we have long been committed not to collect fees from school children or their parents to cover the cost of using school buildings and facilities. Other methods than the price mechanism must be used to determine the timing and the extent of such types of public capital formation.

By one variety of revenue bond public investment is exposed to the test of the market only in a superficial sense. Such projects as state office buildings or state armories may be paid for by bonds serviced from space rentals, but these, in turn, depend upon state appropriations derived from general tax funds.[1] The test of the market is missing. Revenue bonds of this type have usually been contrived to circumvent constitutional restrictions on state debt. Similar constitutional restrictions applicable to local governments and the disabilities inherent in the organization of school financing units in many states have given rise to a variety of public corporate authorities which use some form of revenue bond serviced by instalment payments from tax yields. Such artificial usages of the pricing principle are interesting examples of public finance Ameri-

1. Intragovernmental pricing of this sort incidentally has the desirable expenditure control effect by making various state agencies and departments space conscious and requiring them to meet rentals from what they almost invariably regard as inadequate and insufficient appropriations.

cana, but they do not have the essential characteristic of providing a market test to the investment they support.[2]

It is, in fact, only when the revenue bond becomes the true counterpart of the user charge that market forces not only quantify and distribute public investment but also provide a financial and governmental device that solves certain of the most troublesome community problems.

At the expense of some oversimplification, we can say that state and local expenditures divide into three broad categories. First and most important are functions that entail the redistribution of income. These make up about half of state-local spending and include public assistance, education, hospitals, and a variety of health and welfare functions. Second in importance, making up about 30 per cent of the total, are those functions actually financed or potentially financed by user charges. Here are the utility-type services: water, gas, electricity, urban transportation, sanitation, and highways. All other expenditures are less than 20 per cent of the total; major items are police and fire protection, general government, and interest on general debt.

The income-redistributing services and the catch-all category of miscellaneous governmental functions together pose the hard questions of traditional public finance. Finding the sums needed to pay for them means grappling with considerations of equity and incidence in taxation. Determining the scale and the caliber of such services involves a pursuit of the elusive and nebulous goal of maximum social advantage. In the remaining category the user charge functions as an automatic regulator of the scope and direction of the activities that it finances.

Consider the case of highway expenditure. While general taxes are still tapped extensively in order to provide the plant and to cover the operating expenditures that go along with the operation of highways, primary dependence rests upon user charges: tolls, motor fuel taxes, and vehicle licenses. In a very real sense there is no problem of a public-finance nature in connection with the highway function. As the use of highway and bridge facilities enlarges, the revenues available for the provision of additional facilities will tend to expand commensurately. From a social standpoint, therefore, there is no more a problem to financing highways than there is to the matter of financing the acquisition of motor vehicles. I am not here speaking, of course, of such extraneous matters as the

2. Several authorities of this type are described in *Public Authorities in the States* (Council of State Governments), Appendix A, pp. 12–18.

role of consumer credit in paying for automobile purchases, but, rather, of the way the market sees to it that consumers obtain the automobiles they want badly enough to pay for them. So it is with highway finance. A poor allocation of highway revenues, i.e., a disproportionate assignment of expenditure to routes bearing little traffic sometimes, however, obscures and often thwarts the economic function of the user charge device in its application to highway finance. Improvement of formulas for distribution of fuel tax and license revenues, of course, is the solution. Undoubtedly, one of the prime reasons for the recently kindled interest in toll roads is the common failure to spend conventional vehicle revenues fully on the segments of road that generate those revenues.

Borrowing vs. Pay-As-You-Go

Borrowing is only one way that state and local governments obtain capital funds. Frequently their investment outlays are made from government saving or operating surpluses. Under the guise of "pay-as-you-go," the saving forced upon today's taxpayers buys facilities used by the next generation. It isn't really "pay-as-you-go" but "pay-before-you-go" or "save-before-you-invest."[3]

The practice of accumulating surpluses for capital expenditure is more common among states than among local governments; in fact, the accumulation of surpluses by local governments often is prohibited outright. Any money "left over" out of a year's operations is expected to reduce next year's tax levy commensurately.[4] This factor doubtless accounts for the relatively greater dependence by the minor governments than by the states upon borrowing as a source of capital funds.

In contrast to "pay-before-you-go," deficit financing borrows the savings of others. The resulting investment outlay uses a part of the stream or pool of national savings rather than a pool previously accumulated solely by the forced savings of the taxpayers of the investing governmental body. When borrowing is thus employed, the taxpaying community replaces the saving *during*, rather than *before* the beginning of, the service life of the new improvement.

3. H. M. Groves, *Financing Government* (1945 ed.), p. 504. Referring to methods of financing highways, the author goes on to point out, however, that the "aptness of the terminology depends upon whether the 'go' in the disputed phrase refers to traveling or spending" (*loc. cit.*, n. 26).

4. During World War II a number of states expressly authorized local units to accumulate current surpluses for postwar use, mainly capital expenditure. Wisconsin municipalities are permitted to do this by the terms of their home-rule charters (*Municipal Year Book, 1946*, p. 191).

Charges to retire debt principal become a means whereby the tax-paying community matches its capital consumption with its saving for a particular improvement. This is the process that most people would regard as "pay-as-you-go" finance, i.e., as the improvement is paid for as it is used up or worn out, and at the same rate.

There is one crucial difference between deficit and "pay-before-you-go" financing of capital improvements. Where capital funds are first borrowed and then repaid later, during the useful life of the investment undertaking, the pecuniary benefit conferred by the new improvement on the various classes of users becomes the source of funds needed for repayment. The new project, in other words, will generate the income needed if the community is to "buy back" an unencumbered title to a facility financed initially through borrowing from the national supply of savings. A toll road, for example, should give rise to new and more extensive use of motor vehicles sufficient to return the cost of the whole project. The critical question is whether some other use of the national savings might not have been even more productive. No doubt the institutional arrangements for getting resources from savers to investment embody many frictions which give something less than an optimum distribution of savings. Moreover, much public investment must be made without guidance from the price system. It does appear, however, that a better usage of savings could be effected if the user charges and their counterpart, the revenue bond, were free to compete with other private demands for capital formation for the nation's supply of savings.

Public Equities

Apparently growing in importance in the field of revenue bond financing is the practice of pledging security other than the earnings of specific projects. Not only have the older and better established authorities been able to use the remaining earning power of debt-free assets to enhance the attractiveness of new issues, but some of the newest authorities have sought and secured the backing of general obligation credit. An issue secured by the collateral of total enterprise earnings or a contingent pledge of general tax resources over and above the income the specific project alone will yield is bound to be priced more favorably than a pure revenue bond. The interest-saving opportunities of such arrangements are undeniably attractive; the disadvantage is that the investment it pays for largely escapes the objective appraisal of the market and consumer preferences. As the authorities responsible for toll road construction,

bridges, water works, and the like come to find the equities built up in pre-existing projects sufficient to meet collateral requirements for further borrowing, they can become more and more independent of economic tests for their new projects.

Public equities may be the outgrowth of overamortization of existing plant, or of better than anticipated earnings that have not been offset by reductions in charges. They may arise from plant paid for wholly or in part through contributions from general revenues, from free rights of way or dollar grants by other governmental agencies, or simply from price level changes. Any one or a combination of these may afford an opportunity to escape the discipline of the price system and to substitute for it a business or political judgment or some combination of the two.

As the agencies engaged in revenue bond finance are able to draw on larger and larger equities they grow in size and economic power. It seems probable that questions of public policy relating to their control and management may some day be raised. Most of them have at least a partial monopoly, are without regulative supervision, and have an unusual degree of political independence. Such delegations of economic power are ordinarily compatible only with an automatic policing system in which free market forces evaluate schemes of expenditure and users of the facilities have attractive alternatives they can turn to.

On the other hand, what are the alternatives to building up public equities in utility type projects? General obligation debt is one possibility. Its interest-saving and security aspects are attractive at the moment, but are hardly immutable in the face of repeated use. Moreover, for the functions amenable to user charge financing the general obligation debt instrument faces in the wrong direction—toward political rather than economic decision-making.

Another possibility would eliminate from consideration all public investment in which the element of risk is incompatible with the use of 100 per cent loan capital. This would preclude some of the most desirable types of public capital formation; the longer-lived improvements, the developmental projects, and generally those aimed at timely provision of public facilities commensurate with population growth and private capital formation.

Public equities may, therefore, with all their shortcomings and dangers provide the best assurance of that volume of public investment necessary to attain the maximum growth and stability for our economy.

DISCUSSION

RAYMOND E. HENGREN:* Tax-exempt financing has many facets worthy of serious study, and the papers prepared for this discussion of revenue bonds review with considerable thoroughness three important aspects of the subject, namely, the legal, the administrative, and the economic. Each one of the papers was presented by an authority who is especially well qualified to help us appreciate some of the knotty problems which arise in his field of specialization. The presentations have been interesting and they suggest many questions that are deserving of further consideration.

From the viewpoint of the individual who is called upon to analyze municipal credits, Mr. Wood's description of the bond attorney's work was quite reassuring. As a practical matter, the analyst knows that a tangle of legal problems is involved in every municipal issue and that revenue bonds are no exception. That qualified municipal bond attorneys have developed procedures for testing to disclose points of weakness in a credit situation is quite evident from this discourse on the legal aspects of revenue bond financing. In addition, the attorneys have devised many safeguards for buttressing credits. The arrangements for safeguarding these credits have grown out of practical experience that now extends over a period of more than half a century.

The analyst of municipal credits is constantly searching for the margins of protection that the investor may rely upon in times of adversity. In discussing the legal aspects of revenue bond financing, Mr. Wood has furnished some background information concerning the efforts of municipal bond attorneys to build these margins of protection into the legal arrangements for the credit. Finally, it is encouraging for us to be reminded that the attorney takes a very comprehensive view of his responsibilities as he goes about the business of determining the legal status of a revenue bond issue.

On the administrative side the Port of New York Authority furnishes an excellent case study of revenue bond financing. In his paper Mr. Kushell has sketched the history of the Port and outlined some of the more important features of the Port's operations since its inception thirty-four years ago. As we study the role of

* Federal Deposit Insurance Corporation.

revenue bonds in municipal financing today, it is helpful to consider the Authority's impressive list of achievements, the far-flung scope of its operations, and the magnitude of its day-to-day activities.

A brief and succinct statement of the basic philosophy which guides the management of the Port of New York Authority has been presented by Mr. Kushell along with a description of the organization and some details of the structure. The effort to apply methods and procedures developed in the field of private business to the administration of a public enterprise such as the Port is deserving of very careful study.

The chronological record of steps in the financing of the Port of New York Authority traced in Mr. Kushell's paper undoubtedly will prove to be quite helpful to credit analysts. Anyone concerned with a problem involving the use of revenue bond financing needs some points of reference for judging the stage of development in a particular situation. The financial history of the Port, in my opinion, provides just such reference points.

There can be no doubt that the Port of New York Authority currently is in a very strong financial position and that its affairs have been managed skilfully over the years. The Port is a notable illustration of success in the use of revenue bond financing by a huge public enterprise.

The employment of revenue bond financing by municipal authorities involves many important economic considerations. Mr. Mitchell has called attention to some of the complexities of the problem in his paper. The comments about prevailing attitudes with respect to public investments and the remarks concerning "pay-as-you-go" financing of public improvements were quite interesting. As a matter of fact, his analysis touches many points that are entitled to much more extensive treatment than is possible within the limits of a paper designed for this occasion.

A test to ascertain the appropriateness of revenue bond financing has been suggested by Mr. Mitchell. In his opinion, revenue bonds are best adapted to projects that may be financed by charges collected from the users of the facilities. Also, he has assembled some useful statistical information as indicative of the extent to which revenue bond financing may be used to facilitate the activities of state and local governments. In view of the tests suggested by Mr. Mitchell, it is easy to understand his misgivings when revenue bond financing is buttressed with a pledge of the general credit of the

issuer or when the credit strength results primarily from resources accumulated in the course of an earlier period of successful operations.

In the concluding section of his paper Mr. Mitchell has raised a question with respect to the "control" of public authorities that employ revenue bond financing. These authorities, he points out, for the most part operate in areas where they have at least a partial monopoly. Also, to a rather considerable degree, they are politically independent. Furthermore, they are not subject to the type of regulatory supervision that we customarily associate with private enterprise when it is engaged in public service activites. What, then, are the limits on the growth of these public authorities? To the extent that they are successful, will they grow in size and economic power without bound? Some discussion of these questions would seem to be appropriate at this time.

Implicit in Mr. Kushell's comments about the Port of New York Authority is the feeling that the administrative arrangements and the application of management standards adopted from the field of private corporate enterprise will take care of the "control" problem. Mr. Mitchell, it should be noted, has expressed concern about the limits on the scope of activities of financially successful authorities. These enterprises may use the "equities" they have accumulated to extend their activities into areas which cannot be justified in terms of broad economic considerations. This question of "control" is not one to be treated lightly.

Up to this point in the discussion of revenue bond financing, there has been no mention of the so-called "industrial" bonds. This type of financing has attracted a considerable amount of attention in the financial press recently. Such securities may now be issued by subdivisions of government in a number of states to finance the purchase of land and the construction of facilities which are leased to business enterprises. The object of the financing is to attract business to a community with the expectation that general economic activity in the area will be stimulated. Although debt service for this type of revenue bond financing usually depends entirely upon rentals collected from the firms that lease the facilities, sometimes the full faith and credit of the issuer is pledged as additional security for the credit. Revenue bond financing of this character continues to appear in fair volume. It is a type of financing which in individual cases presents some interesting questions that are exceedingly difficult to answer with the customary generalizations.

The use of revenue bonds to finance the construction of highways has been touched upon in the papers now under discussion. Certainly this type of financing affords a means for completing some segments of the highway system rather quickly. However, it is necessary to view the highways of the nation as an integrated system. In terms of the analysis which has been presented by Mr. Mitchell's paper, this application of revenue bond financing raises some hard questions regarding the allocation of user charges.

The margins of protection for debt service are vitally important in all revenue bond financing. Stress has been placed on that point in all of the papers. In my opinion, it would be helpful for us to focus some discussion on the problem of developing these margins when revenue bond financing is applied in new and untested areas.

LONG-TERM TRENDS IN CAPITAL FORMATION AND FINANCING

TRENDS IN CAPITAL FORMATION AND FINANCING IN AGRICULTURE*

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THIS PAPER SUMMARIZES some highlights of a study of investment in agricultural capital over the eighty-year span, 1870–1950, and it suggests trends in capital formation and financing that seem likely to unfold in the years immediately ahead. The study has been carried on under the joint sponsorship of the National Bureau of Economic Research and the former United States Bureau of Agricultural Economics.

Limitations of space make it necessary to exclude from this paper many important findings that help to explain the historical trends and that add support to the speculations on future developments. Likewise, indications of sources, methods of estimation, and limitations of data must here be severely restricted. The important information, thus omitted, may be found partly in the National Bureau's Occasional Paper No. 44, and more fully in a forthcoming monograph that will report the entire study.

HISTORICAL TRENDS IN CAPITAL FORMATION AND FINANCING

Physical capital in agriculture grew steadily from 1870 to 1950 except between 1920 and 1940. The countrywide rate of growth decelerated steadily from an average of 4 per cent per annum in the 1870's to about 1 per cent in the 1910's. Then followed two decades in which our data indicate a shrinkage of agricultural capital. But in the 1940's capital expanded again at the rate of 1 per cent per annum, just as before 1920. This rate of growth required a gross in-

* This paper by Alvin S. Tostlebe, and the following two papers by Sergei P. Dobrovolsky and Melville J. Ulmer, with discussions by George T. Conklin, Jr., and Eli Shapiro, were presented at a meeting of the American Finance Association in Detroit on December 28, 1954. The program was under the chairmanship of James J. O'Leary, Life Insurance Association of America.

vestment in physical assets in the 1940's of $27 billion—an amount roughly one-fourth greater than the value of all physical farm assets in 1900. In addition to this, farmers added $5 billion to their working cash balances. Of the $32 billion invested in physical assets or added to cash balances used in farming no less than 90 per cent were supplied from the gross income of farmers.

In early decades, when agriculture was rapidly expanding into new areas, growth of farm capital was little influenced by the rise and fall of prices of farm products or by the changing prospects which attended such fluctuations. Between 1870 and 1900 prices paid to farmers were declining much of the time, yet during those years capital formation proceeded at a relatively faster pace than in any subsequent period.

The main reason for the high rate of capital formation in the early years, despite frequent weakness in the prices of farm products, was that much land suitable for farming was being made available to farmers by federal and state governments, by railroads, and by timber companies at very low prices, or entirely without cost if the land were homesteaded.

Abundant land of good quality, available at little or no money cost, was a powerful inducement to establish new farms even though other forms of farm capital were often relatively scarce in the new regions and high in price. Cheap land and the related prospect of high net income and capital gains, once the farm was in operation, appealed not only to farmers in the older regions, and to their children who were ready to set out for themselves, but also to men in other occupations and even in other countries who had enough capital or credit to obtain at least the essential materials, equipment, and livestock with which to make a start. The inducement to establish new farms that cheap or free land provided was probably about as strong in bad times as in good, since the opportunity to establish an independent livelihood on such land had widest appeal when industrial jobs were hard to get or to hold, and when failure was especially threatening in other lines of business.

Financial data of farmers for these early years are too meager to warrant an attempt to identify the sources that financed the growth described above. Two or three observations may, however, be hazarded. First, since so much of the growth accompanied thicker settlement of the newer regions, much of the new capital was probably formed through direct efforts of the farmers themselves. By homesteading, farmers obtained the transfer of land from the pub-

lic domain to farms. By clearing, draining, and improving their fields in other ways, farmers through their own efforts increased their inventory of land by raising its quality. Moreover, whenever farmers themselves constructed a building or fence, or raised young livestock to augment their breeding herds, or retained a larger proportion of crops for feed, they engaged directly in capital formation. Such additions to farm capital require no direct financing. They are acquired through special effort of the farmer, as when rough land is improved, or through abstinence as when calves that might have been turned into immediate cash for spending on consumer goods are raised to augment the breeding herd. The source of such additions to capital is gross income; the saving and investment necessary for capital formation occurs simultaneously with production.

A second observation concerning the financing of capital formation on the frontier before 1900 is that settlers often brought some money with which to improve and operate their farms. When settlers came from other walks of life or from foreign countries the funds which they brought represented capital not theretofore used in farming. Even farmers who migrated from eastern states may have brought funds that had been invested in non-farm assets.

Finally, most of the financing from external sources in the latter part of the nineteenth century was probably furnished by local lenders. Goldsmith has estimated that in 1900 as much as 94 per cent of the total outstanding farm mortgage debt was owed to banks, individuals, and others.[1] While banks and others doubtless made some loans with "eastern money" the greater number were probably made with money from local sources.

After 1900, and particularly beginning with 1910, financial data pertaining to farmers are sufficient to permit at least rough estimates of the cost or value of replacements and additions to farm capital, and of the sources that financed them. Estimates of the amounts in current dollars that were invested in farm capital, and the sources of financing, are presented by five-year periods in Tables 1 and 2. Table 1 is derived from Table 2; the latter gives somewhat more detail, while the former summarizes uses and sources during the first half of this century. Though admittedly rough, these estimates show unmistakably a number of interesting developments and relationships in capital formation in the agricultural sector.

During the first two decades of this century investment in agriculture rose steadily and at an accelerating rate. Indeed, new capi-

1. Estimate supplied by Raymond W. Goldsmith Associates, Inc., Washington, D.C.

TABLE 1

USES AND SOURCES OF NEW CAPITAL IN FARMING, BY FIVE-YEAR PERIODS, 1900–1949

(million dollars)

Item	1900–1904	1905–1909	1910–14	1915–19	1920–24	1925–29	1930–34	1935–39	1940–44	1945–49	Line
Uses											
1. To maintain, increase, or improve											
a) Land and buildings	$2,391	$3,037	$3,733	$4,275	$2,090	$4,397	$2,213	$2,175	$ 3,954	$ 7,930	1
b) Machinery and motor vehicles	1,360	1,738	2,226	3,302	3,051	3,454	1,640	3,455	4,960	10,775	2
2. To increase inventories											
a) Livestock	240	27	476	232	−661	−428	−261	−9	313	−1,902	3
b) Stored crops	122	14	317	156	−278	−23	−1,086	1,068	584	404	4
3. To increase cash working balances	175	233	76	1,364	− 294	−170	−136	728	2,610	2,331	5
Total	$4,288	$5,049	$6,828	$9,329	$3,908	$7,230	$2,370	$7,417	$12,421	$19,538	6
Sources											
1. Loans and book credit	$1,197	$1,468	$2,495	$7,155	$ 746	$ 609	$ 0	$ 561	$ 0	$ 2,996	7
2. Financial reserves	0	0	0	0	1,512	0	498	0	0	0	8
3. Gross income	3,091	3,581	4,333	2,174	1,650	6,621	1,872	6,856	12,421	16,542	9
Total	$4,288	$5,049	$6,828	$9,329	$3,908	$7,230	$2,370	$7,417	$12,421	$19,538	10

Source:
Lines 1 and 2, from lines 1 and 2, Table 2.
Lines 3, 4, and 5, positive values from lines 3, 4, and 5, and negative values from lines 13, 14, and 15, Table 2.
Line 7. Sum of lines 17, 18, and 19, minus the sum of lines 7, 8, 9, Table 2
Line 8. From line 16, Table 2.
Line 9. Difference between line 6 and lines 7 plus 8, this table.

TABLE 2

USES AND SOURCES OF CAPITAL IN FARMING, AND IN FARMER-OWNED FINANCIAL RESERVES BY FIVE-YEAR PERIODS, 1900–1949

(million dollars)

Item	1900–1904	1905–1909	1910–14	1915–19	1920–24	1925–29	1930–34	1935–39	1940–44	1945–49	Line
Uses											
1. To maintain, increase, or improve											
a) Land and buildings	$2,391	$3,037	$3,733	$ 4,275	$2,090	$4,397	$2,213	$2,175	$3,954	$ 7,930	1
b) Machinery and motor vehicles	1,360	1,738	2,226	3,302	3,051	3,454	1,640	3,455	4,960	10,775	2
2. To increase inventories											
a) Livestock	240	24	476	232	0	0	0	0	313	0	3
b) Stored crops	122	14	317	156	0	0	0	1,068	584	404	4
3. To increase cash working balances	175	233	76	1,364	0	0	0	728	2,610	2,331	5
4. To increase financial reserves	230	294	327	3,464	0	266	0	1,153	8,186	3,450	6
5. To reduce debt (net)											
a) Mortgage	0	0	0	0	0	0	154	0	1,653	0	7
b) Non-real estate											
(1) Banks and federal agencies	0	0	0	0	742	167	1,599	0	0	0	8
(2) Other	0	0	0	0	807	239	803	105	400	0	9
Total uses	$4,518	$5,343	$7,155	$12,793	$6,690	$8,523	$6,409	$8,684	$22,660	$24,890	10
Sources											
1. Depreciation allocated from gross income											
a) Buildings	$1,030	$1,380	$1,657	$ 2,643	$3,404	$3,019	$2,286	$2,238	$ 2,977	$ 5,332	11
b) Machinery	1,210	1,556	1,952	2,720	3,556	3,155	2,521	2,730	4,282	8,021	12
2. Inventory liquidation											
a) Livestock	0	0	0	0	661	428	261	9	0	1,902	13
b) Stored crops	0	0	0	0	278	23	1,086	0	0	0	14
3. Financial asset reduction											
a) Cash balances	0	0	0	0	294	170	136	0	0	0	15
b) Financial reserves	0	0	0	0	1,512	0	498	0	0	0	16
4. Loans and book credit											
a) Mortgage	445	534	1,783	3,458	2,295	1,015	0	109	0	480	17
b) Non-real estate											
(1) Banks and federal agencies	376	467	356	1,849	0	0	0	557	118	1,216	18
(2) Other	376	467	356	1,848	0	0	0	0	0	1,300	19
5. Net income	1,081	939	1,051	275	−5,310	713	−379	3,041	15,283	6,639	20
Total sources	$4,518	$5,343	$7,155	$12,793	$6,690	$8,523	$6,409	$8,684	$22,660	$24,890	21

SOURCES OF DATA IN TABLE 2

Line 1. Value of accretions—calculated by multiplying the increase (or decrease) in constant prices for each five-year period by the average of the implicit price indexes at the beginning and end of each 5-year period—plus line 11.

Line 2. For 1910–49, BAE estimates of expenditures for machinery including motor vehicles. For 1900–1909, value of accretions calculated in a manner similar to that described for line 1, and adjusted to improved comparability with BAE estimates of expenditure.

Lines 3 and 4. Value of accretions calculated in a manner similar to that described for line 1. Where the value is negative it is entered in line 3 or 4 as zero and it appears as a positive quantity in line 13 or 14.

Lines 5 and 6. Net changes calculated from estimates of financial assets owned by farmers made by Raymond W. Goldsmith and by BAE. Negative amounts are entered as zero in lines 5 and 6 respectively and positive amounts appear in lines 15 and 16.

Lines 7, 8, and 9. See lines 17, 18, and 19.

Line 10. Sum of lines 1–9 inclusive.

Line 11. 1910–49 estimates by BAE. 1900–1909, new estimates based on the following assumptions: (1) that depreciation in 1900 bore the same relation to census value of buildings in that year as BAE's estimate of depreciation for 1910 bore to census value of that year; (2) that the increase in annual depreciation was uniform from 1900 through 1909.

Line 12. Same source, similar assumptions and calculations as for line 11.

Lines 13, 14, 15, 16. See lines 3, 4, 5, and 6.

Line 17. Change in amount of debt outstanding as estimated by BAE for periods beginning with 1910, and as estimated by Goldsmith before 1910. Adjustments were made to take account of the abnormal volume of foreclosures in the four periods covering 1920–39. Reductions of debt are entered in line 17 as zero and the amounts of reduction appear as positive quantities in line 7.

Line 18. Change in amount of debt outstanding as estimated by BAE for periods beginning with 1910 and as estimated by Goldsmith before 1910. Reductions of outstanding debt are entered in line 18 as zero, and the amounts of reduction appear as positive quantities in line 8.

Line 19. Change in amount outstanding as estimated by Goldsmith for years before 1940 and by BAE 1940 to 1950. Reductions are shown in line 19 as zero and the amounts of reduction appear as positive quantities in line 9.

Line 20. Balancing item. Difference between line 10 and the sum of lines 11–19 inclusive.

Line 21. Sum of lines 11–20 inclusive.

tal was provided in such volume that the agricultural plant continued the rapid expansion characteristic of earlier decades. This period was one in which prospects for farmers were notably bright. Farm income rose steadily, thereby presumably increasing the ability of farmers to finance new capital with current savings. Nevertheless, the growth of investment was accompanied by an increasing participation of creditors as financiers of the sector. In the first five-year period growth of the creditors' interest amounted to 28 per cent of the new investment; by 1915–19 it amounted to 77 per cent.

Unfortunately, we are not free to infer without qualification that more than three-fourths of the new capital formed in the 1915–19 period was financed directly by creditors. Voluntary transfers of farms in this period, as estimated by the Bureau of Agricultural Economics, averaged 36.3 per thousand farms compared with 29.2 for 1912–14 and 21.9 for the period 1920–24. Hence it seems certain that the increase in mortgage loans in the 1915–19 period reflects an

increase in transfers of established farms as well as vigorous acquisition of new capital. It follows that the figures in line 7 of Table 1 and line 17 of Table 2 overstate to an undeterminable degree the amount of new capital that was financed by creditors and understate the amount financed with farm income. However, it seems equally certain that without this expansion of credit, the increase in capital—whatever the source of its financing—would have been far less. The vigorous demand for established farms, made possible by the increase in mortgage loans, resulted in an acceleration of transfers and in rapidly rising prices which powerfully stimulated expansion of land in farms, construction of farm buildings and other capital-forming investments.

During the two decades that followed 1919 investment in the farm plant was only about a fifth less than the amount invested in the two preceding decades. But there were some striking differences. First, the amounts invested by five-year periods show no orderly trend after 1919, but a sharp fall and rise once in each decade, reflecting changes in current income, availability of credit, and in prospects. Second, credit was used much less extensively than formerly to finance transactions associated with farming and farm ownership; indeed, in the 1930–34 period repayments to creditors exceeded by a large sum the new borrowings. Third, the volume of investment did not even sustain the plant; there was a 3 per cent contraction in its value at constant prices.

It is somewhat surprising to find investment of the 1920–39 period so nearly equal to that of 1900–19 (Table 1). In two decades which generally have been regarded as difficult ones for farmers, they nevertheless found it possible to invest more than four-fifths as many dollars, provided on balance for the two decades entirely by themselves, as they had in an earlier relatively favorable period of equal length. This achievement is the more remarkable since in the earlier period farmers had considerable assistance from creditors, but in the latter period farmers reduced their debts.

The explanation of this accomplishment seems to be as follows: First, during the earlier period, particularly during World War I, farmers accumulated very substantial holdings of United States bonds and other assets not used in farming. In the 1915–19 period farmers used more than 13 per cent of their net cash income to augment such financial reserves, increasing them by some $3.5 billion. These holdings were drawn down severely following 1920. Moreover, inventories of livestock and stored crops, which had absorbed

substantial amounts of capital during the two decades of physical expansion preceding 1920, now underwent some liquidation. Reduction of these inventories made funds available for repayment of debt and for reinvestment in real estate and machinery. When such reinvestment occurred, it represented merely a shift from one type of capital to another. Net accretions to capital were financed by liquidation of farmer-owned financial reserves or by savings from gross farm income.

A second factor accounting for the relatively large amount of funds provided internally in the 1920's and 1930's was the amount of cash receipts from farm marketings and government payments. This source provided not only the large depreciation charges indicated in Table 2, but, after payment of other expenditures, a volume of net cash income which, dollarwise, if not necessarily in purchasing power, compared favorably with that of earlier periods.

Creditors supplied some capital in three out of the four five-year periods although the sharp decline in debt suggests no help from that quarter. However, the decrease in outstanding debt in the 1920's and 1930's does not accurately reflect the net flow of capital funds between farmers and their creditors. It is deceptive because during these years debts were substantially reduced through foreclosures, assignments, and scale-downs prior to refinancing, as well as by repayments which alone made demands on farmers' income and savings. Changes in the volume of farm mortgage debt that appear in Tables 1 and 2 were adjusted by rough estimates of the amount of debt that was extinguished by means other than repayment. These estimates are based on observations of the amount of reduction by means other than repayment in the eleven-year period 1929–39,[2] and on relative rates of foreclosure estimated by BAE, in the five-year periods for which we have made adjustments.

Despite an investment of current dollars in the 1920–39 period, only one-fifth less than in the preceding twenty years, the size and condition of the agricultural plant was not maintained at the level of 1920. Costs of agricultural capital were sufficiently higher in the later period so that new investment did not offset depreciation and liquidation. However, in view of the greatly restricted help from creditors it is surprising that the plant was maintained as well as it was. Farmers could not have supported the level of investment so

2. D.C. Horton, H. C. Larsen, and N. J. Wall, *Farm-Mortgage Credit Facilities in the United States,* U.S. Dept. of Agriculture, Misc. Pub. No. 478, p. 49.

well except for financial reserves which they had built up in the fat years that preceded the lean ones.

The 1940's brought exceptional changes in farm prospects and in practices. In the first half of the decade net cash receipts and net cash income reached new peaks although the farm labor force declined sharply. As a result both the incentives and the ability of farmers to invest in new capital rose to heights not known since 1920. In addition to expanding their capital, farmers were able to build up large financial reserves and reduce debt. This improvement of financial condition resulted in part from restriction of expenditures caused by shortages in many types of goods that developed in connection with wartime control of materials.

In the second half of the decade, when farm income rose to new peaks and goods were in better supply, expansion of farm capital was on a scale that required some 21,400 million dollars to finance it. This was an all-time high for a five-year period. How was this huge increase financed? One answer is that three-fifths of the amount became available as depreciation charges against gross income, while one-seventh was provided out of net income and another seventh by creditors. But it will be more in line with the thinking of those who invested in farm capital to say that six-sevenths of the amount was provided by farmers out of their gross incomes and that one-seventh was furnished by creditors. Farmers do not generally think of depreciation as a current and continuing cost of production, nor as a rule do they accumulate depreciation reserves. They tend to regard outlays for replacement of depreciated items in the same way that they regard outlays to increase their equipment, and they are likely to draw on the same sources to finance both.

Effects of Growth of Farm Capital on its Composition

The remarkable growth of agricultural capital has changed its basic composition somewhat over the years. The shifting importance of regions that accompanied expansion of farming into new areas in the earlier decades, and the more intensive utilization of resources in later decades, altered the countrywide proportions in which real estate, machinery and power, productive livestock, and stored crops were utilized.

Comparison of constant-price values for the entire eighty-year span shows that real estate fluctuated narrowly between 78 and 82 per cent of total physical assets. The increase in machinery's relative importance was continuous, and if taken alone is spectacular.

But if horses and mules are added to machinery the relative investment in machines and power units changed much less spectacularly, from 6.6 per cent of the total in 1870 to 9.8 per cent in 1950.

Productive livestock appears to have declined somewhat in relative importance, although there has been little change if we exclude the earlier decades when much livestock was grazed on land not in farms. Nor was the change in stored crops noteworthy. In general the percentages give the impression that real estate has become somewhat less important, machinery and power somewhat more important. And one suspects that the growth of machinery and power, influenced perhaps largely by improvements in the farm tractor and by the substantial migration of farm workers to cities, is largely responsible for this change in the composition of physical farm capital.

While the foregoing analysis has great interest from a technological point of view, an analysis of the changing composition of farm capital measured in current prices has more significance from a financial point of view. Measured in current prices the investment in farm capital underwent especially interesting changes after 1935. Whereas for twenty-five years prior to that time the value of farm real estate fluctuated narrowly between 79 and 82 per cent of all physical assets, after 1935 it declined consistently and in 1950 stood at only 70 per cent—fully 6 percentage points lower than at any time prior to the 1940's. Between 1935 and 1950 current values of productive livestock and machinery gained about equally in importance, and stored crops gained, but in lesser degree. As a result of these developments the problem of financing non-real-estate capital items increased in importance, while that of financing real estate diminished. Moreover, the rise in relative importance of capital items usually financed by non-real-estate credit was accentuated by the increasing prominence of cash balances which, like physical items, are often maintained at a satisfactory level by borrowing. These rose quite consistently from 2.4 per cent of total assets used in farming in 1900 to 6.5 per cent in 1950.

Prospective Trends in Capital Formation and Financing

Analysis of the foregoing trends (and of those of farm output, labor force and related items, which cannot be explored in this paper) seems to justify the following conclusions with respect to the formation of capital and its financing in the years immediately ahead.

1. Growth of capital in the aggregate will occur only in times of reasonable prosperity, at a rate that will average substantially less than 1 per cent per annum.

2. The composition of farm capital will continue to be slowly modified. Machinery, productive livestock, and cash balances will gain in importance; land and buildings and stored crops will decline.

3. Capital per farm and per person engaged in farming will rise, making possible a continuation of the secular rise in output per person engaged.

4. Volume of farm products per unit of capital will rise.

5. Funds for investment in agriculture will be provided chiefly by farmers out of gross income, although amounts and proportions provided by creditors may remain above the 1945–49 level.

6. Long-term mortgage credit will be used relatively less for purposes of capital formation and relatively more for transferring ownership of real estate than in earlier decades.

7. Non-real-estate credit will represent a larger fraction of the total than in the first half of this century, partly because of the expanding need for production credit, partly because of the changing importance of the components of capital.

The reasons for expecting the agricultural plant to grow only when farming is relatively prosperous need not be repeated here. But some explanation of the indicated rate of growth under conditions that invite investment is in order.

As already shown, the rate of capital growth had decelerated sharply for at least half a century when the prolonged depression in agriculture during the 1920's and 1930's halted expansion completely. In the 1910's and again in the 1940's the rate of increase averaged 1 per cent per annum. But both of these decades witnessed inflationary expansion of farm earnings, exceptionally tight labor conditions, and other abnormalities associated with war which caused capital formation to proceed under forced draft. What is more, capital formation during the 1940's reflected the low levels of investment that accompanied unprofitable farm operations and unfavorable prospects so characteristic of the two preceding decades. Hence the rate of 1 per cent per annum, during the 1940's, has every indication of being quite abnormal, and far higher than should be expected over the years ahead.

That the rate of increase will be well below that of the 1940's seems clear also when the prospects for growth are considered. Since the end of World War II numerous studies have been made of the

prospective demand for farm products, with projections usually made to 1975.[3] In these projections the Bureau of the Census medium estimates of population in 1975 (190–193 million) have been basic data,[4] and major assumptions have generally included a decline in tension of world affairs, substantial stability in prices, declining exports, and full employment with a fairly high level of per capita income.

Under these conditions the growth in demand for farm products foreseen by these investigators ranged generally from 30 to 40 per cent, and in one case where a per capita increase of 15 per cent was included to provide an improved diet, the over-all increase was estimated at 47 per cent.

With increase in demand envisaged within these limits the need for additional amounts of land was estimated within a range of no net increase in cropland or its equivalent to a net increase of possibly 30 million acres. How much additional farm land will be needed to satisfy the requirements incidental to population growth and possible increase in per capita consumption depends, of course, on how much the yield per acre can be raised through wider use of available technology and through application of technological improvements that are yet to come. But in any case the consensus is that, at most, net increase in farm land by 1975 will be so small that the annual rate will hardly exceed one-quarter of 1 per cent. The extent to which the quality of existing farm land will be built up through irrigation, drainage, clearing, and other methods can hardly be foretold. Unfortunately, depletion of land that is carelessly farmed will also affect the net results. In any case, net accretions to the land base from improvements of its quality are likely to be very

3. Reference is made specifically to the following studies:

1. *The Report of the President's Water Resources Policy Commission, 1950,* "A Water Policy for the American People," Vol. I. chap. ii.
2. *The Report of the President's Materials Policy Commission, June 1952,* "Resources for Freedom," Vol. I, chap. 9, and Vol. V, Report 7.
3. Byron T. Shaw, "Land Resources for Increased Agricultural Output," *Journal of Farm Economics,* Vol. XXXIV, No. 5 (December 1952).
4. Byron T. Shaw, Statement at Hearings before the Subcommittee on Appropriations, H. R., 82d Cong., on Department of Agriculture Appropriations for 1953, Part I, pp. 228–36.
5. Sherman E. Johnson, "Prospects and Requirements for Increased Output," *Journal of Farm Economics,* Vol. XXXIV, No. 5 (December 1952).
6. H. H. Wooten, *Major Uses of Land in the United States,* Tech. Bull. 1082, USDA (1953).

4. A later estimate of 207 million has been published by the Bureau of the Census in "Current Population Reports," Series P-25, No. 78 (Aug. 21, 1953). Use of this slightly higher estimate would, of course, raise the estimates of demand for farm products a little.

moderate when considered in relation to the total land now under farm use.

Expansion of capital in the form of farm buildings is also likely to be small. Were expenditures for such improvements to continue between 1950 and 1975 at the rate which has prevailed since 1946, the expansion in this inventory would be large. But expenditures on farm buildings in recent years reflect a backlog of need growing out of years of stagnation in building caused first by depression in the 1920's and 1930's and later by wartime restrictions and shortages in construction materials. This backlog should be fully liquidated long before 1975. Once this influence is removed, there are reasons to believe that further expansion will be small.

To begin with, if expansion of farm land is to be severely limited, it follows that construction of entire new sets of buildings on the new farm land will likewise be severely limited. Moreover, the tendency toward larger farms will make some existing buildings unnecessary and they will not be replaced when they wear out. There is, of course, a concurrent tendency to divide farms located near industrial centers to provide small part-time farms for industrial workers, and this gives rise to some new construction. However, this development has not prevented a substantial decline in the number of farms in recent years—a fact which suggests that consolidation of farms has been more influential in determining the number of farm buildings required than partition. Finally, the substitution of mechanical for animal power has reduced the volume of service buildings required to house the power units, a development offset to some extent by the increase in other livestock, especially in dairy herds, that has increased the need for shelter for these animals. Moreover, the trend in buildings to service cattle is toward less costly units both in the matter of construction and in maintenance.

The investment in machinery is likely to rise. Mechanization in much of the Cotton Belt was not far advanced in 1950 and there is a strong probability, based in part on increasing adaptability of machines, and in part on developing competition from other sectors for farm labor, that much machinery will be added to farms in the southern regions.

Whether or not the investment in machinery will grow much, or any, in the regions which are already well mechanized will depend largely upon the intensity of competition of other sectors of the national economy for the farm labor supply. Should this remain as intense as it has generally been since the start of World War II the

expectation of further growth of investment in labor-saving machinery does not seem unreasonable even in highly mechanized regions like the Corn Belt and Great Plains. Moreover, the increasing availability of electricity on farms and further progress in making tractors adaptable to uses heretofore limited to hand or animal power should contribute to higher investments in machinery in all regions. All things considered, it seems unreasonable to expect the rate of growth of this type of capital to exceed the low rate foreseen for farm land and buildings, and hence a further modification of the capital mix.

The forces that are likely to influence the investment in productive livestock are conflicting. It seems probable that demand for livestock products will increase relatively more than demand for other farm products, and this prospect, coupled with the prospective increase in population, suggests substantial growth of the inventory from which livestock products will be derived. But perhaps in no other branch of farming have innovations of the past two or three decades been so capital-saving, and if this trend continues, the expanding requirements for animal products will be secured in part by improvement in breeds, feeds, and management. Even so, it seems likely that the investment in productive livestock on farms will grow substantially enough over the years to raise the relative importance of this type of capital.

The cash working balances used in farming are likely to continue their steady growth both in absolute amount and in relative importance. Belief that our growing population can be adequately supplied with little or no expansion of land and buildings rests to no small extent on the assumption that we shall increasingly substitute other resources for land, that we shall look more and more to commercial fertilizers, lime, insecticides, and commercial feeds for the increase in output that we need. This means a further growth in specialization and reliance on non-farm sectors for intermediate products—developments which underlie the rise in importance of working balances which has already occurred.

In this connection we venture the guess that stored crops may become somewhat less important in the total capital mix. The bulk of such holdings are home-grown feeds, and to the extent that commercial feeds supplant them a smaller volume of crops will be stored.

If the above-mentioned prospects materialize, what will be the effect on agricultural financing? A review of the broad historical

trends suggests that in the first two decades of this century, when agricultural capital was expanding vigorously, an increasing proportion of new capital was financed by credit. Whether this rise in importance of credit was a continuation of a trend established decades before is not known. In any case, in the two and a half decades that followed 1919, farmers paid off far more debt than they incurred, thereby greatly reducing the importance of external financing. Only since World War II has the use of credit again expanded.

Is the marked increase shown for 1950 in credit financing a temporary upsurge following the war, or has a trend begun that may carry the proportion of agricultural capital financed by creditors considerably higher? Factors in support of the latter view are impressive.

A price level that is high in comparison with most earlier years receives powerful support from important economic policies embraced by both major political parties. If prices remain relatively high they will contribute much to the need for borrowed funds of those who wish to begin farming, as well as of those who wish to expand present facilities.

The marked tendency since 1940 for farms to increase in area and in total capital employed is likely to continue in the foreseeable future. The increasing mechanization of farms and the increasing availability of mechanical devices for accomplishing all sorts of farm work will strongly support the movement toward larger and more costly units of operation. As farms grow in size and cost so does the problem of financing them. Increasing assistance from creditors will probably be needed to assemble and develop the fields, herds, and equipment which will make efficient operation possible. Some of this credit will, of course, contribute nothing to capital formation as it will be utilized to transfer ownership of existing resources. But loans used for development of land and construction of buildings or for improvement and enlargement of inventories of livestock and machinery will give rise to new farm capital.

A factor that will encourage capital formation and that may raise the proportion that is financed by creditors is the growing awareness of the benefits to be derived from heavier capital investments per farm and per worker. This awareness is not limited to farmers and their technical advisors but is shared increasingly by both public and private lenders.

Will there be significant changes in the types of credit used by farmers and in the purposes for which it will be needed? The changes

in farm capital that are likely to occur will tend to make non-real-estate credit relatively more important in the decades that lie ahead than it has been so far in this century. "Production credit," necessary to acquire adequate amounts of the resources that are increasingly used in farm production as substitutes for land, is certain to grow in relative importance. In fact the ability of farmers to attain the level of production indicated for 1975 depends in large measure on their ability to obtain adequate loans to finance their requirements for fertilizer, machinery, and other productive items.

The proportion of long-term mortgage credit used to transfer existing farm real estate to new owners will probably increase, while a smaller proportion will be used for establishing new farms or improving real estate. This is not to say that lenders will have few occasions to finance land-improvement projects and new buildings, but such uses are likely to be less prominent than when farming was expanding over new land where new sets of buildings were required, and when drainage and clearing projects were on a vaster scale than those foreseen in the next few decades. On the other hand, the high level of prices that we assume will prevail, and the increasing size of farms, will make the use of mortgage credit in acquiring a farm of proper size even more important than in the past.

CAPITAL FORMATION AND FINANCING TRENDS IN MANUFACTURING AND MINING, 1900–1953*

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I

DURING THE FIRST HALF of this century, the manufacturing and mining sector showed a more pronounced growth than the economy as a whole. The combined output of manufacturing and mining rose from $11.7 billion in 1900 to $224.3 billion in 1948 (in current prices). Around 1900, slightly more than one-fifth of national income originated in these industries; in the twenties their share rose to roughly one quarter of the total; in recent years it has been nearly one third.[1]

The pronounced growth in output obviously required rapid expansion of capital facilities. In discussing capital expansion, the distinction between reported book values and the values adjusted for price changes should, of course, be borne in mind. When attention is directed to changes in physical capacity, an adjustment for price changes is required. On the other hand, when the financial aspects of investment are studied, unadjusted money flows are of prime importance.[2] For comparison's sake, both sets of values are

* This paper presents some of the findings of a larger and still unfinished study, being carried on at the National Bureau of Economic Research. The author is indebted to Mr. Martin Bernstein for able assistance in the research underlying this paper.

1. The rate of growth was considerably lower in mining than it was in manufacturing. As a matter of fact, the relative share of mining in the national income declined over the period reviewed. But since the share of mining was much smaller than the share of manufacturing, the latter essentially determined the trend for both industries combined.

Mining and manufacturing are combined in this study in one sector because the two industries are closely interrelated and the available data are, in part, unsegregated. Even when separate data for some series are available, these series are not strictly consistent because of changes in classification. This difficulty is to some degree eliminated when the two classes are combined.

If an accurate breakdown of the data were possible it would, of course, be interesting to analyze the behavior of manufacturing and mining separately. It should be realized, though, that divergent trends can be found in comparing different industries within either the manufacturing or the mining class. In general, practically all aggregate data conceal divergent tendencies shown by some of the component parts.

2. Still another set of values is required when the problem of replacement cost is investigated. In this case the original cost of all capital items must be revalued each year at current prices.

presented in Table 1. It may be observed that the book value of net total assets[3] in manufacturing and mining rose from $10.7 billion in 1900 to $120.6 billion in 1948. The increase cannot be attributed solely to the inflow of new capital funds, since the figures are affected to a certain extent by asset revaluations made by some firms. Unfortunately, the available data on revaluations are confined to relatively short periods of time. However, they seem to indicate that while this factor has seriously affected the balance sheets of some individuals firms, it was not of major proportions for the

TABLE 1

TOTAL CAPITAL IN REPORTED AND 1929 VALUES, ALL ESTABLISHMENTS, MINING AND MANUFACTURING, 1900–1951

	Total Capital		Annual Rate of Change from Previous Benchmark Year (geometric average, %)	
	Reported Values (million dollars)	1929 Values (million dollars)		
	(1)	(2)	(3)	(4)
1900	10,704	22,645		
1909	22,320	41,911	+7.6	+6.3
1919	52,141	61,395	+8.9	+3.9
1929	68,275	73,101	+2.7	+1.8
1937	57,208	63,044	−2.2	−1.8
1948	120,637	87,860	+7.0	+3.1
1951*	158,139	112,165	+9.4	+8.5

* Preliminary estimates.

Source: Based on data in Daniel Creamer, *Capital and Output Trends in Manufacturing Industries, 1880–1948*, and Israel Borenstein, *Capital and Output Trends in Mining Industries, 1870–1948*, Occasional Papers 41 and 45, respectively (National Bureau of Economic Research, 1954) and NBER unpublished tables.

entire industry. It may, therefore, be reasonably assumed that the increases in book values, revealed by Table 1, are roughly indicative of the amounts of new funds absorbed.

The annual rates of growth, computed for successive decades on the basis of reported values, show considerable variation but no persistent trend over the entire 1900–1951 period. The rate was much lower in 1919–29 than in the preceding two decades. The 1929–37 period was characterized by net asset contraction. But in 1937–48 the rate rose again almost to the 1900–1909 level. And during the following four years (1948–51) the rate was higher than in any previous decade within the period reviewed.

When all values are expressed in constant (1929) dollars, the annual rates of growth become lower, especially during the 1909–19

3. Net total assets are defined as total assets net of depreciation reserve and all other valuation reserves. In this table the assets are also net of intercorporate investments and holdings of government obligations.

and the 1937–48 periods which contain the inflationary years of World War I and World War II respectively. The rates indicate a declining trend over the first four decades. But the trend appears to have been reversed during 1937–48 and 1948–51. The rate for 1948–51 is again found to be higher than any of the previous rates.

A word should be added about changes in the composition of assets in mining and manufacturing during 1900–1950. Fixed assets (land and plant and equipment net of depreciation reserves) expanded at a lower rate than total assets. The book value of fixed assets rose from $5.9 billion in 1900 to $51.6 billion in 1948. Expressed in constant (1929) dollars, the rise was from $13.2 billion in 1900 to $43.1 billion in 1948. The ratio of fixed assets to total assets declined from 55 per cent in 1900 to 51 per cent in 1929 and to 43 per cent in 1948.

More information on changes in the asset structure may be obtained from sample data available for manufacturing corporations. Chart 1 indicates the trends in the relative importance of current, fixed, and other assets of large manufacturing companies over the 1900–1950 period.[4] It may be observed that the ratio of current assets to total assets was characterized by a strongly upward trend: it rose from less than 30 per cent in the beginning of the century to over 50 per cent around 1950.[5] The ratio increased during the first two decades, reaching a peak during World War I. The wartime rise was mainly accounted for by a large accumulation of liquid assets—cash and marketable securities. The ratio declined after the war, but remained at a much higher level throughout the twenties as compared with the prewar years. A sharp drop in the ratio occurred during the depression of the early thirties, principally because of a contraction of inventories and accounts receivable. The ratio began to rise once more in the late thirties and reached a new high during World War II, again mainly on account of a pronounced expansion of liquid assets. In the years following World War II, as in those which followed World War I, the ratio declined from the wartime peak but remained much higher than it had been before the war.

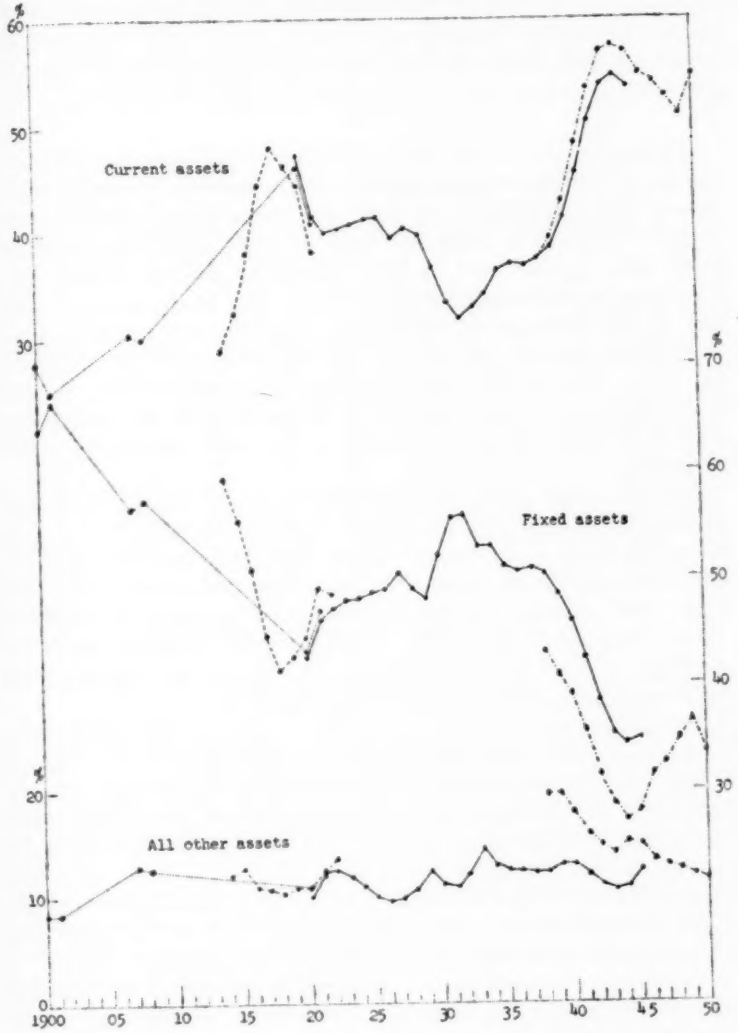
Movements of the current assets to total assets ratio were accompanied by movements in the opposite direction of the fixed assets to total assets ratio. In fact, since "other assets" (investments in subsidiaries, sinking funds, and prepaid and suspense items) re-

4. The available data on small- and medium-sized corporations show, in general, similar trends. Owing to space limitations, charts for these companies are not presented.

5. This rise was accompanied by an increase in the ratio of current liabilities to total assets. See Section III for a discussion of trends in liabilities.

CHART 1

RATIOS OF SELECTED ASSETS TO TOTAL ASSETS
LARGE MANUFACTURING CORPORATIONS, 1900–1950



National Bureau of Economic Research spot-year samples: 21 corporations, 1900–1901; 143 corporations, 1907–8; 219 corporations, 1920–21

NBER sample of 81 corporations, 1914–22

NBER sample of 84 corporations, 1920–45

Statistics of Income data for corporations with assets of $5 million or more, 1938–50

mained generally stable in relation to total assets, a high degree of inverse correlation is found between the current asset and the fixed asset ratios. Over the entire 1900–1950 period, the ratio of fixed assets to total assets declined from over 60 per cent to under 40 per cent.

II

Turning to the sources of funds used by the manufacturing and mining industries, we must confine our discussion to corporate enterprises, since practically no data are available for non-corporate establishments. The corporate form of organization has in recent years been predominant in both manufacturing and mining: corporations have accounted for over 90 per cent of the value of product. At the beginning of the century, the relative share of corporations was somewhat smaller, but even then it exceeded two-thirds of the total. Thus, in discussing the financing of corporations, we shall be dealing with a major portion of the industry in the early years, with practically the entire industry in the latter part of the period reviewed.

We may begin with a brief discussion of the internal sources of business financing. The distinction between net and gross income retention must, of course, be clearly borne in mind. We shall use the term net retained profit to designate the part of net profit after taxes which remains in the business after payment of dividends (other than stock dividends). The term gross retained funds (or earnings) will be used to designate the sum of net retained profit and depreciation and depletion allowances.

Long-term trends in the depreciation and the net profit components of gross retained earnings may be observed in Table 2, where the data are presented in the form of cycle averages. The depreciation and depletion series is characterized by a pronounced and almost uninterrupted growth; only in the 1932–38 cycle the average annual amount is found to be lower than in the preceding cycle. The net retention series also shows a pronounced upward trend over the entire period reviewed; but it is at the same time characterized by strong upward and downward swings.

The relative importance of depreciation and net profit retention shows wide inter-cycle variation. The amount of depreciation and depletion allowances was considerably smaller than the amount of net retained profit in the 1900–1904 and 1904–1908 cycles. (Prior to the imposition of the corporate income tax in 1909 depreciation accounting was highly imperfect.) During the following two dec-

ades, however, allowances rose much faster than net retentions. In 1924–27, the amount of depreciation and depletion was two and a half times as large as that of net retained profit. In the 1927–32 and 1932–38 cycles gross retained earnings fell short of depreciation. Net retained profit gave place to net corporate dissaving. But large

TABLE 2

GROSS INTERNAL FINANCING, NEW SECURITY ISSUES, AND EXPENDITURES FOR NEW PLANT AND EQUIPMENT DURING CYCLES IN BUSINESS ACTIVITY, MINING AND MANUFACTURING CORPORATIONS, 1900–1953

Business Cycle Period*	Depreciation and Depletion (1)	Net Retained Profits (2)	Gross Internal Financing (1+2) (3)	Net Security Issues (4)	Gross Internal Financing Plus Net Security Issues (3+4) (5)	Expenditure for New Plant and Equipment (6)	Depreciation and Depletion as a Percentage of New Plant and Equipment (1÷6) (7)	Gross Internal Financing as a Percentage of New Plant and Equipment (3÷6) (8)	Gross Internal Financing Plus Net Security Issues as a Percentage of New Plant and Equipment (5÷6) (9)
	(average annual amounts† in million dollars)								
1900–1904....	260	459	719	412	1,131	803	32.4	89.5	140.8
1904–08.....	364	417	781	256	1,037	1,002	36.3	77.9	103.5
1908–11.....	488	474	962	317	1,279	1,066	45.8	90.2	120.0
1911–14.....	616	485	1,101	271	1,372	1,187	51.9	92.8	115.6
1914–19.....	1,170	1,968	3,138	488	3,626	2,041	57.3	153.7	177.7
1919–21.....	1,612	618	2,230	1,242	3,472	2,706	59.6	82.4	128.3
1921–24.....	1,907	374	2,281	668	2,949	2,097	90.9	108.8	140.6
1924–27.....	2,161	863	3,024	873	3,897	2,557	84.5	118.3	152.4
1927–32.....	2,306	−988	1,318	587	1,906	2,285	100.9	57.7	83.4
1932–38.....	1,889	−683	1,206	−75	1,131	1,763	107.1	68.4	64.2
1938–46.....	2,763	2,002	4,765	206	4,971	3,171	87.1	150.3	156.8
1946–49.....	4,146	5,687	9,833	1,935	11,767	8,382	49.5	117.3	140.4
1949–53‡.....	6,424	4,645	11,069	2,128	13,197	10,308	62.3	107.4	128.0

* Based on National Bureau of Economic Research business cycle chronology.

† In computing averages, values for terminal years are weighted by one-half.

‡ Incomplete.

Source:

Column 1. Based on data in Raymond W. Goldsmith's forthcoming *A Study of Saving in the United States* (Princeton University Press), Vol. I; *Statistics of Income*, Part 2 (Bureau of Internal Revenue); and *Survey of Current Business*, September 1954, Dept. of Commerce, Table 3, p. 5.

2 and 4. See Table 3.

6. Data for all establishments for 1919–29 from George Terborgh, "Estimated Expenditures for New Durable Goods, 1919–1938," *Federal Reserve Bulletin*, September 1939, Table 2, p. 732, for 1930–51 from *The Midyear Economic Report of the President, July 1952*, Table B-18, p. 157 (a continuation of Terborgh's series), and for 1951 to 1953 from the *Survey of Current Business*, September 1954, Table 2, p. 4, were adjusted to an all corporation level. The 1919–53 series was extrapolated backward to 1900 using a weighted composite index based on the domestic consumption of construction materials and industrial machinery and equipment in William Howard Shaw, *Value of Commodity Output since 1869* (National Bureau of Economic Research, 1947), Table I-1, pp. 64–65 and 52–53, respectively.

net retentions were again evidenced during the war and postwar periods. In fact, net retained profit exceeded depreciation by a considerable margin in the 1946–49 cycle. The reverse was true, however, of the 1949–53 period.

It is interesting to compare the inflow of internal funds with plant and equipment expenditures. The use of internal funds is not, of course, confined to fixed assets; nor is the financing of fixed assets confined to the internal source. However, the data indicate that over the entire 1900–1953 period gross retained funds differed by a rela-

tively small margin from plant and equipment outlays: total gross retentions were $180 billion and total expenditures $163 billion or 91 per cent of the retentions. When individual cycles are considered, the differences are found to be considerably larger. Since plant and equipment expenditures represent the main use of long-term funds, one would expect the demand for long-term external funds to be relatively small in periods when the ratio of retentions to expenditures is high, and relatively large in periods when the ratio of retentions to expenditures is low. A relationship of this nature is indeed observed when actual data are examined.

The ratio of gross retained earnings to plant and equipment expenditures was especially high in the two war periods (see Table 2). Both of these periods were also characterized by particularly low ratios of net security issues (total new issues less retirements) to internal funds—16 per cent in World War I and only 4 per cent in World War II.

In so far as the non-war cycles are concerned, the following general tendencies may be observed:

1. In the four cycles prior to World War I, and also in the first postwar cycle (1919–21), gross retained earnings fell short of plant and equipment expenditures. Security issues amounted, on the average, to approximately 40 per cent of gross retentions during these cycles.

2. In contrast, gross retained earnings exceeded plant and equipment expenditures during the twenties (the 1921–24 and 1924–27 cycles). Security issues were slightly less than 30 per cent of gross retentions during this period.

3. In the thirties there was a substantial decline in the inflow of gross internal funds. (As already mentioned above, the inflow of *net* internal funds ceased completely; net profit retention gave place to *net* corporate dissaving.) Plant and equipment expenditures declined too, but much less sharply. As a result, in the 1927–32 and 1932–38 cycles we find an excess of plant expenditures over gross retentions. In the 1927–32 cycle security issues amounted to 45 per cent of gross retained earnings. In the 1932–38 cycle there was a net outflow of security funds; the plant and equipment expenditures, which were not covered by gross income retentions, were financed during this period with funds obtained by partial conversion of other assets (marketable securities, receivables, and inventories) into cash.

4. In the period following World War II (the 1946–49 cycle and

the 1949–53 incomplete cycle) gross retained earnings were higher than plant and equipment expenditures by a considerable margin—though a much smaller one than that observed during the war. The ratio of security issues to gross retentions in the postwar years was approximately 20 per cent—considerably lower than in any previous non-war cycle.

We may now examine trends in net retained profits, as compared with trends in net security issues. In this connection, a word of explanation is required on the nature of the data used.

The data on profit retentions, presented in Table 3, are based on profits as reported by corporations. In studies concerned with real investment and saving, it is appropriate to adjust reported profits for gains and losses resulting from price fluctuations. In dealing with financial problems, on the other hand, money flows must be analyzed whether or not they are accompanied by changes in real assets. For the sake of comparison, however, trends in adjusted profits will also be considered briefly in this section.

With respect to net security issues (total new issues less retirements), it is important to remember that they are not equal to the net flow of funds into the corporate economy from the securities market. In order to arrive at the net inflow of funds, one would have to subtract from total new issues not only the amount of securities retired by the issuing corporations, but also the amount of funds disbursed by corporations in acquiring securities issued by other corporations (new as well as old issues). We have no data on the net flow of funds through security transactions into the manufacturing and mining sector over the 1900–1950 period. There is reason to believe, however, that while the amount of net issues differs from the amount of net inflow, the long-term trend has been generally similar for both series. We may reasonably assume, therefore, that when net retained profit increased or decreased in relation to net issues, a change in the same direction occurred in relation to net inflow of funds.

In Table 3 the data on net profit retention (based on reported profits) and net security issues are presented in the form of cycle average. It may be observed that retained profits were especially high relative to net security issues during the two war cycles: 1914–19 and 1938–46. If the war cycles are omitted, the following general tendencies may be observed:

a) In the 1900–1914 period an increase may be observed in the relative importance of the internal source; the ratio of retained

profits to the total amount of funds obtained from both sources rose from 53 per cent in the 1900–1904 cycle to 64 per cent in the 1911–14 cycle. (In other words, while retained profit was only slightly higher than security issues in 1900–1904, it was nearly twice as high as security issues in 1911–14.)

TABLE 3

NET SECURITY ISSUES AND NET RETAINED PROFITS DURING CYCLES IN BUSINESS ACTIVITY, ALL MANUFACTURING AND MINING CORPORATIONS, 1900–1953

Business Cycle Period*	Net Capital Stock Issues (1)	Net Bond Issues (2)	Net Security Issues (1+2)	Net Retained Profits (3+4)	Net Security Issues Plus Net Retained Profits (3+4)	Ratio of Stock Issues to Net Security Issues (1÷3)	Ratio of Net Retained Profits to Net Security Issues Plus Net Retained Profits (4÷5)
	(average annual amounts† in million dollars)					(per cent)	
1900–1904	158	254	412	459	871	38.3	52.7
1904–1908	143	113	256	417	672	55.9	62.1
1908–1911	177	140	317	474	791	55.8	59.9
1911–1914	212	59	271	485	755	78.2	64.2
1914–1919	410	78	488	1,968	2,456	84.0	80.1
1919–1921	815	427	1,242	618	1,860	65.6	33.2
1921–1924	385	283	668	374	1,042	57.6	35.9
1924–1927	569	304	873	863	1,736	65.2	49.7
1927–1932	733	−146	587	−988	−400	124.9	‡
1932–1938	174	−249	−75	−683	−758	‡	‡
1938–1946	234	−28	206	2,002	2,208	113.6	90.7
1946–1949	810	1,125	1,935	5,687	7,621	41.9	74.6
1949–1953§	691	1,437	2,128	4,645	6,773	32.5	68.6

* Based on National Bureau of Economic Research business cycle chronology.

† In computing averages, values for terminal years are weighted by one-half.

‡ Not computed when numerator and/or denominator are negative.

§ Incomplete cycle.

Source:

Column 1. Based on data in Raymond W. Goldsmith's forthcoming *A Study of Saving in the United States* (Princeton University Press), Vol. I; *Statistics of Income*, Part 2 (Bureau of Internal Revenue); *Commercial and Financial Chronicle;* and an unpublished table furnished by the Division of Trading and Exchanges, Securities and Exchange Commission.

2. Based on unpublished tables of W. Braddock Hickman used for his study *The Volume of Corporate Bond Financing since 1900* (Princeton University Press for National Bureau of Economic Research, 1953) and an unpublished table furnished by the Division of Trading and Exchanges, Securities and Exchange Commission.

4. Based on data in Raymond W. Goldsmith, *op. cit.*; *Statistical Income;* and *National Income Supplement, 1954, Survey of Current Business*, Dept. of Commerce.

b) In the twenties, the trend was reversed and security funds showed a considerable gain in relative importance. The amount of net security issues exceeded the amount of net profit retained in the 1919–21, 1921–24, and 1924–27 cycles.

c) In the thirties, there was a net outflow of funds, both internal and external.

d) In the years following World War II, retained profits were

much higher in relation to security issues than they had been in any previous non-war cycle. In the 1946–49 cycle the amount retained was approximately three times as high as the amount of security issues. In the 1949–53 period (an incomplete cycle) net retained profit declined considerably, but still was more than twice as high as net security issues.

If adjusted data on profits are substituted for the unadjusted data, the relative importance of internal and external funds is changed considerably in those periods which were characterized by rapid price fluctuations.[6] However, net retentions are still found to be higher in relation to net security issues during the two war cycles than during any of the non-war cycles. Furthermore, it is still true that the relative importance of net retentions was greater in the 1946–49 cycle than during any of the interwar cycles. (The ratio of net retained profit to the total amount of funds obtained from both sources was 66 per cent in 1946–49, as compared with 51 per cent in 1924–27, 43 per cent in 1921–24 and 52 per cent in 1919–21.)

In comparing the postwar period with the twenties, we may supplement the data in Table 3 with the available estimates of the net flow of long-term external funds into manufacturing and mining corporations.[7] During 1926–29, the net inflow of such funds averaged around a quarter of a billion dollars per year. This amounted to 43 per cent of the average net retained profit during this period. During 1946–50, the average net inflow of long-term external funds was around $1.6 billion per year, or 30 per cent of the average net retained profit. These estimates, then, also indicate a decline in the relative importance of external funds. It must be pointed out that long-term funds in this computation include funds obtained from security sales and other sources. In the twenties such other sources were relatively unimportant; but in the forties their importance rose considerably owing to the development of term lending by commercial banks. Term loans began to expand in the second half of the thirties and reached substantial proportions in recent years. Here again, statistical data are far from adequate. A rough estimate indicates that increases in term loans, made by commercial banks to all corporations, averaged a quarter of a billion dollars per year during

6. Adjustments of reported profits are based on estimates in Raymond W. Goldsmith, *A Study of Saving in the United States* (Princeton University Press, in press), Vol. I, Table C-3, p. 937.

7. George Terborgh's estimates are used for the 1926–29 period. Our own estimates, prepared by following Terborgh's method, are used for the 1946–50 period.

1946–50.[8] Probably, around one-half of this amount was accounted for by manufacturing and mining industries.[9] It is clear, therefore, that the relative decline in the net inflow of funds through security transactions alone was greater than the foregoing percentages indicate.

The question naturally arises concerning the factors responsible for the trends observed. While a detailed discussion of this subject would be beyond the scope of this paper, a few brief remarks pertaining to it may be made at this point.

Accumulation of internal funds depends on the level of profits and the proportion of profits distributed as dividends. The net inflow of funds from the security market, on the other hand, is related to the level of personal saving and savers' preferences with respect to different investment outlets open to them. Some insights into the working of the factors involved may be gained by comparing the developments in the postwar period with those during the prosperous part of the interwar period.

In all industries combined, average annual profits after taxes were $9.0 billion during 1926–29, as compared with $20.8 billion during 1946–50. The average amount of dividends showed a much less-pronounced rise—from $6.9 billion to $9.3 billion—when these two periods are compared. Dividends were, of course, drastically cut during the depression of the thirties; some increases were reported toward the end of the thirties, but relatively little further change occurred during the war years; considerable further advances were made during the postwar period, but the change was still much less than proportionate to the rise in net profits. As a result of the conservative dividend policy, the proportion of net profit retained by corporations rose from 23 per cent during 1926–29 to 55 per cent during 1946–50. Considered in relation to national income, net profits after taxes slightly declined (from 11.2 to 9.8 per cent), but retained profits showed a substantial rise (from 2.6 to 5.4 per cent) between these two periods.

In contrast to corporate saving, personal saving was no higher in relation to national income in 1946–50 than in 1926–29 (4.2 and 4.3 per cent respectively). Moreover, there was a decline in the

8. This estimate is based on data in Irwin Friend, *Individuals' Saving: Volume and Composition* (John Wiley and Sons, 1954).

9. According to Duncan M. Holthausen, "Term Lending to Business by Commercial Banks in 1946," *Federal Reserve Bulletin*, May, 1947, Table 2, p. 502, 52 per cent of the value of all term loans were outstanding in the mining and manufacturing sector on November 20, 1946.

proportion of personal saving invested in corporate securities, as a result of changes in the composition of the saving population (increase in the relative share of the lower-income groups) as well as changes in the structure of the capital market (expansion of the government sector).

According to the available estimates, net security sales of all nonfinancial corporations averaged $4.1 billion per year during 1923–29 and $4.9 billion per year during 1946–50—an increase of 20 per cent.[10] The average annual amount of personal saving rose 124 per cent between the same periods. Net security sales by corporations are not, of course, equivalent to net inflow of personal saving through security transactions. However, the pronounced difference between the percentage increases in security sales and in total personal saving is clearly indicative of the shift which has taken place in the flow of funds saved by individuals through different investment channels.[11]

During 1951–53 corporate net profits and retained profits declined in relation to national income, under the impact of heavier corporate income taxation following the outbreak of the Korean war. However, net retained profits in 1951–53 still amounted to 3.4 per cent of the national income, as against 2.6 per cent in 1926–29.

In contrast, personal saving rose sharply and represented a much higher share of national income in 1951–53 (6.4 per cent) than either in 1946–50 or in 1926–29. In dollar terms, the amount of personal saving was more than twice as large in 1951–53 as it was in 1946–50. Corporate security sales also rose between these two periods, but much less rapidly than personal saving. For all nonfinancial corporations, the average annual amount of net security sales was $7.5 billion in 1951–53—a 53 per cent increase from the 1946–50 level.

To sum up, the postwar period was characterized by relatively high corporate saving, even though net profit after taxes was lower in relation to national income than it had been in the late twenties. Personal saving represented approximately the same share of national income in 1946–50 as in 1926–29; but the proportion of sav-

10. This calculation is based on data in Raymond W. Goldsmith's forthcoming *A Study of Savings in the United States* (Princeton University Press).

11. Different industries did not, of course, show exactly the same change in the use of security issues as a source of new financing. In manufacturing and mining we find that while net security issues lost in importance relative to retained profits, in absolute terms they were much higher in 1946–50 than in 1926–29. In public utilities only a small absolute increase is found, while the railroad sector shows an absolute decline in net security issues when these two periods are compared.

ing invested in corporate securities was much lower in the postwar years. In 1951–53 there was a pronounced rise in personal saving, both in absolute terms and in relation to national income. Net security sales also increased during those years, but much less sharply than personal saving.

III

Finally, we may discuss briefly the relation between debt and equity financing. We begin with an examination of the trends in stock and bond issues during 1900–1951. During the first two decades net stock sales showed an upward trend and net bond sales a downward trend. Reflecting these divergent movements the ratio of stock issues to total security issues rose from 38 per cent in the 1900–1904 cycle to 84 per cent in the 1914–19 cycle (see Table 3). In the early and middle twenties both stock and bond sales increased substantially. The relative importance of stock issues somewhat declined, but they still accounted for well over one-half of all security issues. In the late twenties (1926–29) stock sales showed a further pronounced rise while bond sales registered a decline; as a result, the ratio of stock to total issues reached a new high (95 per cent). The thirties and the first half of the forties (the war years) were characterized by an outflow of bond funds, redemptions exceeding new sales. In contrast, stock issues continued to show a net inflow of funds although on a substantialy reduced scale as compared with the previous decade. Finally, in the postwar period we find large net inflows of funds through both stock and bond flotations. But the amount of stock issues fell short of the amount of bond issues and, for the first time since the 1900–1904 cycle, the ratio of stock to total issues was below 50 per cent.

As already mentioned above, long-term debt expanded in recent years not only through the medium of bond issues but also on account of term lending by commercial banks. While the data on term loans are far from complete, it is nevertheless clear that the increase in the importance of long-term debt, as a component of total external financing of manufacturing and mining, was even more pronounced than is indicated by the figures on security issues alone.

The reasons why bond issues showed a more pronounced increase than stock issues in the postwar years are generally familiar. They may very briefly be summarized as follows:

a) There was considerable difference in the cost of new financing in favor of bond flotations. Bond yields were relatively low, mainly

as a result of government policy with respect to United States obligations. In contrast, dividend yields on common stocks were relatively high, reflecting the generally conservative and cautious attitude of the investing public toward all "risk" securities.

b) Owing to the heavy income tax load the deductibility of interest charges in computing taxable income became a factor of considerable importance.

c) High profit retentions made it possible for most corporations to increase substantially the use of borrowed funds without reducing the equity to debt ratio to a level that might be considered unsafe or imprudent by conventional standards.

Trends in short-term financing during 1900–1950 may be studied only on the basis of the available balance sheet data. In Chart 2 the data for large manufacturing corporations are presented.[12]

An upward trend may be observed in the ratio of current liabilities to total assets over the 1900–1950 period.

Prior to 1914 current liabilities represented approximately 10 per cent of the total. There was a sharp increase in the ratio (up to nearly 20 per cent) during World War I, followed by a reverse movement during the twenties and the first half of the thirties (in 1932 the ratio was as low as 4 per cent). The ratio began to increase again in the second half of the thirties, and shot up to a new high during World War II (29 per cent in 1943). In the postwar period the ratio dropped to around 20 per cent—a level twice as high as that observed in the years following World War I.

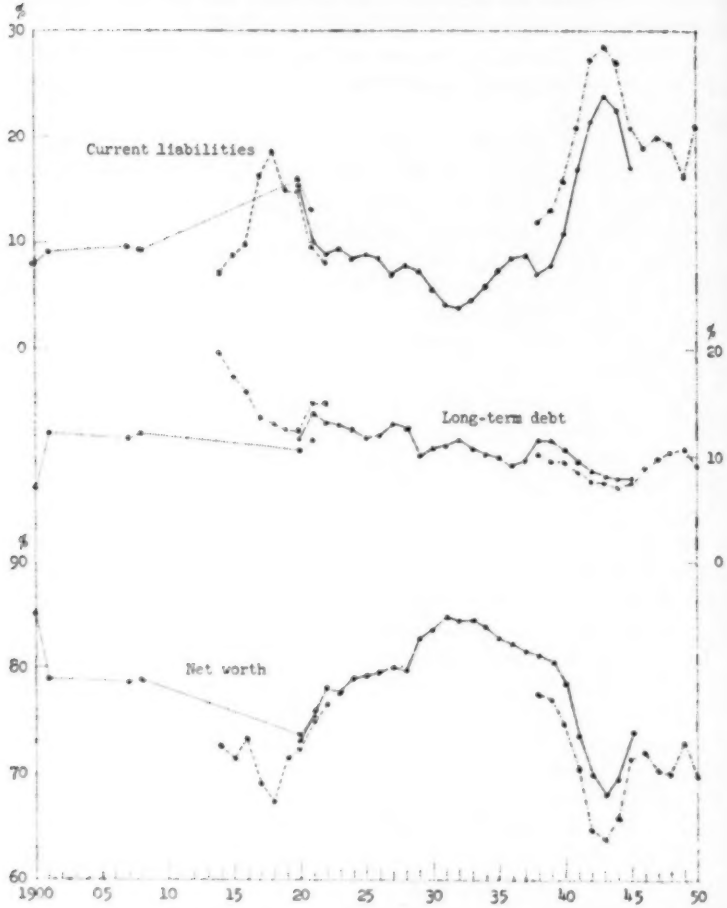
In contrast to current liabilities, long-term debt was characterized by a remarkable degree of stability when expressed as a percentage of total capital. The ratio of long-term debt to total capital remained at approximately 10 per cent over the entire 1900–1950 period. It follows, of course, that changes in the ratio of current liabilities to total capital were acompanied by changes in the opposite direction in the ratio of net worth to total capital. Over the entire 1900–1950 period, net worth declined from more than 80 per cent to approximately 70 per cent of the total.

The increases in current liabilities were largely accounted for by the rising burden of federal income taxation and the resulting expansion of tax accruals. The rise in accrued taxes was accompanied by an accumulation of liquid resources (cash and marketable securities) on the asset side. If tax accruals are excluded from total capital and an equal amount is subtracted from liquid assets, the balance

12. The data on small and medium-sized companies reveal generally similar trends.

CHART 2

Ratios of Selected Liabilities to Total Assets Large Manufacturing Corporations, 1900–1950



National Bureau of Economic Research spot-year samples: 21 corporations, 1900–1901; 143 corporations, 1907–8; 219 corporations, 1920–21

NBER sample of 81 corporations, 1914–22

NBER sample of 84 corporations, 1920–45

Statistics of Income data for corporations with assets of $5 million or more, 1938–50

sheet structure shows much less variation over the period reviewed. Thus, the ratio of net worth to total capital computed on this basis, is found to be 80 per cent in 1950—approximately the same as in the years preceding World War I.[13]

It should also be pointed out that the relative importance of net worth and debt (including accrued tax liabilities) shows greater stability over the 1900–1950 period, if the assets are valued at current replacement prices. On the basis of this valuation, net worth amounted to 79 per cent of total assets in 1948, which is only slightly below the 1900–1901 level.

Finally it should be mentioned that owing to a considerable drop in interest rates on the one hand and a sharp increase in profits before interest and taxes on the other, the relative importance of fixed charges in the corporate budget substantially declined in the postwar years. For all manufacturing corporations the ratio of interest paid to profit before interest and taxes was 12.3 per cent in 1929, 8.8 per cent in 1939 and only 2.6 per cent in 1950.

In the light of these observations, it could hardly be contended that manufacturing corporations became generally overburdened with debt in recent years.

13. Since tax accruals cannot be segregated from "other liabilities" in our source materials, net worth is related to total capital less "other liabilities." Tax accruals make up a major part of "other liabilities," and we thus take changes in "other liabilities" to represent those of tax accruals.

LONG-TERM TRENDS IN THE FINANCING OF REGULATED INDUSTRIES, 1870–1950

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TWO OUTSTANDING CHANGES have occurred in the financing of regulated industries over the eighty-year span for which I have assembled data. First, there has been a gradual, steady, and pronounced shift from external to internal financing. Second, there has been a shift in the *form* of external financing from stocks to bonds. This paper will describe the dimensions of these long term trends, and explore the underlying institutional factors which have determined them.

I

As background, brief reference will be made first to the pace and magnitude of capital formation over the 1870–1950 span. It is generally recognized that in the latter decades of the nineteenth century, regulated industries were a major factor in the nation's economic development and an even greater influence in its capital markets. During the 1870's, expenditures of regulated industries for reproducible capital amounted to about one-fourth of the entire nation's gross capital formation, including public and private, agricultural and non-agricultural outlays. Perhaps not so fully appreciated is the relative magnitude and pace of expansion from this point on. It should be remembered that in 1870 street and electric railways, telephones and electric light and power all had the entirety—or very nearly the totality—of their growth still before them. Even the railroads—already the giant in this segment of the economy and in the nation as a whole—were from a quantitative point of view still immature; measured by the constant dollar value of their road and equipment, the size of the railroads increased fourfold in the years subsequent to 1870. And, of course, bus and air transportation, trucking, radio communication, and pipe lines were developed in the main in the period after World War I. From 1870 to 1889 the aggregate value of plant and equipment of all regulated industries measured in 1929 dollars rose from 8 billion to 16 billion; by 1912—at 32 billion—it had doubled again. By the end of 1950 it was at a new peak of 48 billion of 1929 dollars, six times the size of 1870.

Although growth in this segment of the economy was brisk throughout the eighty-year span, it was most rapid before World War I. Indeed, the long-term trend in net capital formation appears to have turned downward somewhere in the neighborhood of 1910. This means, of course, that the stock of physical, reproducible capital continued to grow, but at a slower absolute rate. It is of interest to note here that the relative—i.e., percentage—rate of growth in the physical stock of capital was downward from the very beginning of the period we cover. Moreover, this was approximately true of each of the four component industries I have selected for special study, as well as for the total of the regulated group. Thus, within less than a decade after the start of such industries as electric light and power and telephones there was a distinct downward trend in the relative rate of growth in their physical stock of plant and equipment.

This fact is perhaps not surprising. But we shall note later that it is a consideration of some importance in the determination of methods of financing capital formation; and we may note now that this trend is far from being an inevitable characteristic of every industry. Indeed, a small, little known industry, characterized by small business units would by its nature be expected to depart materially from this pattern. For growth in this case would depend upon the slow, gradual accumulation of capital by individual proprietors. The high risk involved would preclude for some time access to organized capital markets, and would narrowly limit the availability of credit generally. As this industry expanded, and as the business units within it grew, these barriers might be expected to weaken. Provided that we are dealing with an industry destined for ultimate success, it is likely that its relative rate of growth would remain stable or upward for several decades as within an ever greater radius the nation's capital was mobilized for its use. If technological development in this industry were such as to engender a rise in the ratio of physical capital to output, this would be an *additional* factor making for an increasing—rather than decreasing—relative rate of growth in the stock of plant and equipment. A number of manufacturing industries would conform in whole, or in substantial part, to this pattern.

The regulated industries, however, were differently situated in every respect. In the most prominent and important cases, the individual business units involved were out of technological necessity large at the very outset. They were highly publicized and typically

blessed with a substantial degree of monopoly. From their very beginnings, they attracted investors with what appeared to be a relatively low element of risk and a relatively large promise of profit. The accessibility of capital permitted a swift burgeoning at the start, which in relative terms, as we have seen, very soon diminished. And this decline was accelerated by technological developments, which in this segment of the economy resulted in a pronounced and fairly steady reduction in the ratio of fixed real capital to product. Thus, in the 1880's the capital-product ratio for the regulated industries in the aggregate was 13—meaning that for every dollar of annual output there existed in this segment 13 dollars worth of plant and equipment, with both terms valued at 1929 prices. By the 1940's this ratio had fallen to less than 2, a change of immense importance for several lines of economic analysis. In the present context, however, we note that it was a significant factor tending to reduce over time the percentage rate of increase in the physical stock of capital.

II

The data available for studying long-term trends in financing the regulated industries are, of course, of limited reliability and refinement. I have compiled approximate sources and uses of funds analyses of four components of the regulated group. For the earliest years, these data were derived primarily from changes in balance sheet items, after some adjustments designed to provide comparability in coverage and at least partial elimination of the intra-industry purchase and sale of securities. For the later years it was possible to introduce a number of additional refinements of more importance. For example, on the uses side, estimates of actual capital expenditures were substituted for crude changes in the value of plant and equipment. On the sources side, figures representing net securities issued were substituted for crude changes in securities outstanding. Nevertheless, even at their best the data are suitable for the detection of broad trends rather than fine shades of difference or short-term changes.

The four components selected for special study are in quite different stages of development and, together, account for a very large proportion of the total capital formation of all regulated industries. They are: steam railroads, telephones, electric light and power, and street and electric railways. In 1950, these four components accounted for one-fifth of the gross capital formation of all private

non-agricultural industries in the United States and for nearly three-fourths of the total gross capital formation of the regulated group as a whole.

Of the four components, the most mature is street and electric railways, which reached the peak of its growth—i.e., the peak of its net investment flow—in 1905. Of course, net capital formation continued in subsequent years, though at a diminishing rate, until about 1916, when it ceased. Since 1916 its total physical capital stock has been declining, and by substantial amounts.

The least mature of the four industries studied is telephones. Net investment even after allowance for price changes has been flowing to this segment at an increasing rate, over the long run, from its beginning in the late 1870's to the present time. Ranged between these extremes are the railroads and electric light and power. The former is a mature industry, but not—as in the case of street and electric railways—one which has been subject to any pronounced, absolute contraction. On balance, real net investment in the railroads ceased at the end of the 1920's, and has been slightly negative since: i.e., capital, in real terms, has flowed out of this industry, though at a very modest rate, during the two decades ending in 1950. However, from the financial standpoint it is important to note that this is distinctly true of capital only when measured in physical terms. Because of the rising trend of prices in this period, the railroads—in a sense of some significance for financial markets—have remained a net user of money capital. Their expenditures for road and equipment have exceeded by a substantial margin the total of their depreciation charges. This excess amounted to about a billion dollars in the decade ending in 1940, and in the following nine years it amounted to about $3 billion.

The electric light and power industry more closely resembles the telephones in growth pattern since 1870, though unlike the latter, it has displayed the first faint signs of maturity. Real investment in this component rose by progressively larger amounts until about 1909, then continued upward, though by decreasing amounts until the mid 1920's. Since, then, though capital formation has continued briskly, from a long-run standpoint it has tended slightly downward.

Exclusive of capital consumption and replacement, in the eighty-year span from 1870 to 1950 the regulated industries have accumulated net fixed reproducible capital valued at 40 billions of 1929 dollars. The bulk of this, as we have seen, was accounted for by the

four components under review. Of course, other assets—particularly cash, receivables, and inventories—were built up in this period. But for all of the components, fixed capital (including land) consistently accounted for at least 80 per cent, and sometimes the totality, of all capital uses. We may turn then to the sources of this capital accumulation.

III

Mention has already been made of the first major trend to be discussed in this context—i.e., the secular shift from external to internal financing. This was a broad, profound alteration in the pattern of financing clearly discernible in each of the components without exception. From 1880 through the early 1900's all components obtained from 90 to nearly 100 per cent of their capital outside. In subsequent years the situation was markedly different. In the case of the railroads, where the trend was most pronounced, the proportion of capital obtained externally declined from 98 per cent in the 1880's to 90 per cent in the next fifteen years, to less than 60 per cent in the following ten years, and continued gradually downward to zero in the decade of the 1940's, i.e., in the latter period none of the capital requirements of the railroads, in the aggregate, were externally financed.

In the electric light and power, the proportion of capital obtained externally declined from 92 per cent in the years before 1912 to 85 per cent in the next ten years, to 77 per cent in the late 1920's and 1930's, and to less than 50 per cent in the twelve years from 1938 to 1950. In street and electric railways the proportion dropped from 98 per cent in the period prior to 1902, to 95 per cent in the next ten years, to 87 per cent in the decade ending with 1922, by which time, of course, this component had ceased to be a net user of capital. In telephone the proportion of capital obtained externally fluctuated more from decade to decade than in other components, but on balance declined from 92 per cent in the years prior to 1902 to a proportion which ranged from 40 to somewhat less than 60 per cent in the years following 1913.

Part of this pronounced trend toward internal financing was, of course, due to the growth of depreciation charges relative to gross capital expenditures. Indeed, abstracting from price changes, a proportionate rise in depreciation charges is inevitable in an industry in which the relative net growth of physical assets is retarded, while depreciation rates remain about the same. Such was the case with

the industries under review. As already indicated, the net growth of these industries, as measured by the relative rise in their physical assets, declined almost from the very beginning. Depreciation rates, on a weighted average basis, remained in general about the same.

The resulting trend toward higher depreciation charges, relative to all capital expenditures, was reinforced in our data by the sparing use of depreciation accounting in the earlier years of our time span. On the other hand, it was dampened by the secular rise in prices, which served to boost current capital requirements relative to depreciation charges based on original cost. But our figures leave no doubt of the net effect on balance.

Depreciation amounted to less than 3 per cent of the capital requirements of the steam railroads, electric light and power, and street and electric railways prior to 1902, and to about 8 per cent for telephones. By the time of World War I and the immediately following years, this proportion had grown to one-fourth for street railways, and by the decade of the 1940's to between 40 and 50 per cent for the other segments.

However, the trend toward internal financing, at least in some of our components, goes much farther than this. Retained income, after deduction of depreciation, financed only 2 per cent of the gross capital requirements of the railroads in the 1890's, but rose progressively in subsequent years to reach 50 per cent of gross capital formation and 100 per cent of net capital formation in the 1940's. In electric light and power the corresponding percentage rose over the same period from 5 to 13 per cent of gross capital formation and from a little more than 5 to over 20 per cent of net capital formation. In the other two components the trend was less pronounced and indeed, in the case of telephones, persisted only through the 1920's. In more recent years in the latter component there was a slight decline in the ratio of retained earnings, after depreciation, to total capital requirements. But for all components, in the broadest terms, the general trend over the period as a whole was upward.

It is possible to analyze this trend in terms of three fundamental ratios, the numerators and denominators of which should in each case be measured in current dollars: (1) the rate of growth of the industry, i.e., the ratio of net capital formation to the value of total asests; (2) the rate of profits, i.e., the ratio of profits to the value of total assets, and (3) the rate of savings, i.e., the ratio of retained earnings, after depreciation, to profits. A declining rate of growth,

thus defined, coupled with a stable or rising rate of profit, would result over time in proportionately larger internal financing, net of depreciation, even if the rate of corporate saving remained constant. For all regulated industries, in the aggregate, this fact appears to have been the fundamental one. Net capital formation of regulated industries as a percentage of the total value of plant and equipment, both measured in current dollars, declined from more than 4 per cent per annum in the period 1891 to 1910 to less than 2 per cent in the period from 1927 to 1950. Profits for the group as a whole, figured as a percentage of plant and equipment in current dollars, rose from about 3 per cent to about 5 per cent over the same period. Couple this with virtual stability, secularly, in the rate of corporate savings as measured in the studies of Raymond W. Goldsmith, and we have a sufficient explanation for the trend toward internal financing in the regulated industries.

A simple arithmetic example may serve to clarify this. Suppose an industry with $10 billion in plant and equipment is growing at the rate of 4½ per cent per year. Then its net capital requirements would be $450 million. Its profits, at an assumed rate of 3 per cent, would amount to $300 million. If its rate of saving were 20 per cent, retained earnings net of depreciation would amount to $60 million, or 13 per cent of total net capital requirements.

Now suppose with the passing decades the industry continued to grow so that its plant and equipment, in current prices, now aggregates $50 billion. If the rate of growth has by this time declined to 2 per cent, net capital formation would amount to $1 billion. If the profit rate had meanwhile advanced to 5 per cent, profits would amount to $2.5 billion. And if the savings rate remained at 20 per cent, retained earnings would amount to $500 million, or fully one-half the total capital requirements as opposed to only 13 per cent at the beginning of the period.

Although the figures are primarily illustrative, they indicate, in the broadest terms, actual events in the regulated industries. However, during the past decade the trend toward internal financing in the group as a whole was intensified by a rise in the rate of savings. It may be noted that, historically, the retention rate appears to have moved in long cycles, and the recent advance may be interpreted as the expansion phase of one of these twenty-year waves, accentuated perhaps by a reaction to record high personal income taxes. A partial divergence of the telephone industry from the general

swing toward internal financing in the 1940's is primarily due to the fact that its own behavior in this period has run counter to this long cycle. The savings rate in this industry declined appreciably, at least in part because of its distinctive dividend policy and profit experience.

Before leaving this subject a further word may be said about depreciation. Since prices in general, and capital goods prices in particular, moved securely upward from the 1890's onward, depreciation charges through most of this period fell far short of capital consumption figured at reproduction cost. It is possible that the trend toward internal financing is attributable at least in part to the conscious effort of corporation managers to correct for this situation. In terms of our ratios, it is conceivable that if prices had been stable, rather than increasing, the rate of corporate saving may have been reduced over the past seventy years, serving to dampen or obliterate the rise in internal financing. There is, of course, no direct route to an evaluation of this possibility. We may, however, compare the rise in estimated capital consumption, measured at reproduction cost, with the actual rise in gross internal financing. Such a comparison shows that the magnitudes concerned are very nearly equal.

In the 1940's, capital consumption at reproduction cost amounted to 85 per cent of all capital requirements of the railroads. As we have seen, 100 per cent of these capital requirements were financed internally. For the other segments the correspondence is even closer. In electric light and power, capital consumption and internal financing were about equal during the 1940's, at approximately 50 per cent of capital requirements. In telephones, they were also equal, at about 40 per cent of total capital requirements. For street and electric railways, over its period of growth through World War I, the comparison is nearly as striking. We may conclude that the rise in internal financing during the last seventy years did little more than parallel the rise in the aggregate cost of replacing capital consumed. At the same time it must be acknowledged that new plant and equipment have almost always been more efficient than the old facilities they replace, especially in the regulated industries. Hence, retained earnings over the span covered have accomplished something more than the limited objective of keeping the physical capital stock intact. In some part they have also contributed to the expansion of capacity.

In summary, the rise in internal financing may be attributed in

the first instance to the retarded relative rate of growth of the regulated industries, accompanied by an advancing rate of profit. Secondarily, it may be attributed to relative stability in the savings rate. This, in turn, may have been supported by the inclination of corporate managers to meet the progressively higher cost of replacing facilities without recourse to outside capital.

IV

While the totality of external financing has been declining, at least relative to capital requirements, it is of interest to note, briefly, significant changes in the composition of these financial claims. Short-term credit has, of course, been of distinctly minor importance in the regulated industries. Changes in current liabilities of all kinds seldom have accounted for as much as 10 per cent, and usually have amounted to substantially less than 5 per cent of all sources of capital. Hence, attention shall be concentrated upon the relative share of stocks and bonds in long-term external financing.

Prior to the turn of the century a very large proportion of the capital flowing to regulated industries was obtained through equity shares. At the extreme, stocks accounted for 85 per cent of all the long-term capital secured externally by the telephone industry in these earlier years. For electric light and power and for street railways, the proportion was 60 per cent; for railroads about 45 per cent. In every case, however, this percentage declined sharply and steadily in subsequent years.

On balance, and in the aggregate since World War I, the railroads have obtained *all* outside capital through issuance of bonds, as against only 55 per cent in the earlier days. Telephone in the 1940's obtained about 90 per cent through bonds against less than 13 per cent before 1890. Electric light and power obtained 60 per cent in bonds as against 40 per cent before 1912. Even in the short period from 1890 through 1912, in which their growth was most rapid, street railways shifted perceptibly from major reliance on stocks to major reliance on bonds.

Of course, the significance of this trend must be viewed in context. Its effect on financial structures is substantially modified by the expansion of equity claims through internal financing. But in the flow of new outside capital, this trend toward greater indebtedness and away from equity financing was uniform for all components. Undoubtedly it springs from a multiplicity of factors influencing the preferences of suppliers and demanders of capital. In the regulated

industries, however, the most distinctive factor is the existence of regulation itself, which, of course, over the past eighty years has been gradually extended, reinforced, and generalized. The fixing of rates by governmental agencies in relatively stable, monopolistic industries, designed to provide a fair return on total investment, has at least one important consequence in this regard. It establishes a reward for "trading on the equity" which is extraordinarily secure, at least when compared with that in other industries. It has been made progressively more attractive by the downward drift in interest rates.

In addition, of course, other well-known institutional characteristics contribute to the trend toward debt financing, but these are common to all corporate industry. Perhaps the most significant of these are the rise in the corporate income tax and the growing importance in capital markets of institutional investors, restricted either by legal limitation and/or preference to the purchase of bonds.

V

A few words may be in order concerning the implications of our findings for the future. Barring significant institutional changes which may influence the savings rate or the profit rate, the relative importance of internal financing will probably continue to increase in the regulated industries. For the determining factor in the long run, again barring institutional changes, is the pace at which an industry expands. On a proportionate basis, the future growth of the regulated industries is virtually certain to be smaller than the past. Such a decline tends to promote an expansion in internal financing, relative to the totality of capital requirements.

This means, essentially, that the future growth of business will be more and more independent of organized capital markets. This, in itself, is a stabilizing factor, for the acts of saving and investing will be coupled to a greater extent in the same persons—corporate managers.

But unless the organizational characteristics of corporations change, its effect on the competitive efficiency of our economy may not be so beneficial. The ability of business to expand will not rest to so great a degree upon the decision of present or potential owners or creditors, i.e., the purchasers of securities. Instead it will reside in the will of salaried employees of corporations. I do not suggest that the outcome of this is easy to foretell.

But a trend of this kind may be expected to have more signif-

icance for the regulated industries than it would for any of the other major sectors of the American economy. For the links between regulated industries and competitive enterprise are neither powerful nor numerous, and are maintained in large part through capital markets. As the need for recourse to outside capital diminishes, these links are certain to be weakened.

One further possible implication for cyclical behavior may be noted. The use of conventional depreciation accounting, based on original cost, has sometimes been termed a disequilibrating factor in the economy. During a boom, prices rise and depreciation charges become unrealistically low. So deceived are business managers by this, it has been contended, that investment is significantly dampened below the levels it otherwise might have achieved. If valid, this is a factor which would tend to initiate a downturn. But we have seen that the growth of internal financing has roughly paralleled the degree of understatement in depreciation charges. In so far as it does so in the short run—and of course income retention is correlated with profits and prices—we would from this point of view rank the increase in internal financing as a stabilizing factor.

In closing, I should call attention to one characteristic of the data employed in the foregoing analysis. They are broadly aggregative. Lumped together in the railroad segment, for example, are young, swiftly growing western lines and venerable, stable, or contracting lines of the east. I have dealt similarly with time units, grouping together, for example, all the years of the 1940's despite the significant differences between the first and second halves of this decade. The objective, of course, has been to focus attention on *long*-term trends, and on trends which were *predominant* in the regulated industries. The loss of much detail, valuable for many other purposes, is a sacrifice inherent in this framework.

DISCUSSION

GEORGE T. CONKLIN, JR.:* Professor Ulmer's paper is intriguing and interesting, and one which should stimulate considerable thought because it deals with a subject of great practical and theoretical discussion.

The comments which I make below are primarily critical in nature, and I wish to emphasize that they are somewhat tentative and may well have to be changed when further information becomes available.

This leads me to my first criticism, namely, that although this paper depends almost exclusively upon a compilation and interpretation of factual statistics, no figures, charts, or tables are presented in connection with the paper. This seems scarcely appropriate and makes intelligent comment quite difficult. Nevertheless, I have undertaken this somewhat hazardous task and will enumerate below very briefly the main criticisms which I have concerning the paper.

1. It seemed to me that the mix of regulated industries that Ulmer apparently has taken as a sample for the principal conclusions of this paper was not a very good one. The inclusion of the street railway industry which had just about the quickest rise and fall of any regulated industry, and which has been of no practical importance for decades, seems questionable. Likewise, I cannot see any reason for the exclusion of the gas industry which has been of great importance in recent years and over a long span of years previous. If one is to deduce trends concerning regulated industry as a whole, it would seem to me that the gas industry would have to be included.

2. The stress in the paper is on long-term trends derived from averages over succeeding time spans. Use is made of the period 1927–50 and 1938–50 in drawing conclusions as to these long-term trends. I believe that the use of these periods is open to serious question for the determination of long-term trends for very much the same reasons as they were inappropriate for determining long-term population trends. During the decade of the 30's, there was no capital formation on balance in the economy but rather capital consumption. This obviously is not a characteristic of our economy over a long period of time, either past or prospective. How could we then deal with such a period in determining the relationship of external

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funds to internal funds when there is no net demand for capital at all. Likewise, during the war period, when there were no alternative choices available to corporations, their behavior as to external and internal financing was completely unrelated to long-term economic trends. Thus, the security market was pre-empted by the government financing and a tremendous amount of production was financed directly or indirectly by the government. Furthermore, during the war the normal expansion of peacetime plants was impossible and the liquidity of the corporations, in general, reached very high proportions. During their early postwar years, there was a complete reversal of this situation. By using estimates derived from the base period 1927–50 and 1938–50, I cannot see how it would be possible to have any results other than a decreased rate of capital formation in relation to depreciation and a greater reliance on internal sources. However, I do not think that either of these conclusions would be *necessarily* meaningful in terms of long-term economic trends.

3. The analysis ends with 1950, precisely when we are beginning to get some interesting bench-mark data for a high-level full employment economy to be compared with previous periods of this character in the 20's and prior years in order to draw more reliable conclusions concerning *long*-term trends. It seems to me that in this connection we have the same difficulty as in anaylzing the consumption function on the basis of secular trends only and including, nevertheless, the years of the 30's in the model.

4. Sketchy, and very possibly, inaccurate data of the last twenty years and the last five years do not seem to bear out many of the principal contentions of the paper. I realize that this period is open to the criticism that I have just voiced above; nevertheless, if you accept the premise that Ulmer's periods are acceptable, then you run into the fact that for two decades the forces which he points out have apparently not been operating in the direction indicated by him. Thus, from a practical standpoint, if we were to approach capital needs on the basis of such reasoning and found that we would be wrong for twenty years (if that should turn out to be the case), it would not be very successful or practical.

In the case of electric utilities, for example, the percentage of capital needs raised by internal sources appears to have declined over this period and there does not seem to have been any significant trend in the dividend payout on the common stock for electric utilities. Actually the payout on the common stock has increased somewhat. What has happened is that the dividend payments on preferred

stock have declined sharply due to lower dividend rates reflecting lower interest rates and less use of preferred stock as a financing medium. The capital structure as a whole of the electric utilities does not appear to have significantly changed in the last fifteen years.

With reference to the telephone industry, Ulmer seems in one place to say that they do not bear out his general trends and in another states that each single industry examined conforms to the trend. It appears to me that for the past thirty years the telephone industry has been an exception to almost all trends pointed out by Ulmer. Again on the basis of limited and sketchy data, it would appear that depreciation is much less important in relation to capital requirements than in the 20's; that retained income is much less important than depreciation and that internal sources have contributed, in recent years, much less than in the 30's and no more than in the 20's. It is also known that the Bell System is attempting strenuously to restore its common stock and equity position to somewhat the same position that previously existed. In this connection, they have made great use of the convertible bond, and I do not know whether Ulmer's figures treat this as bond financing or stock financing, but basically it has turned out to be almost completely stock financing within a very short period.

In addition, I believe that the paper largely ignores the effect of the regulatory authorities on the financing pattern of the industries.

5. Ulmer mentions that depreciation charges which became unrealistically low in the inflation period might have deceived business managers and dampened investment below what it might otherwise have been. It seems to me that this is questionable reasoning and of no validity in the electric utility, gas, or telephone industries.

6. As to the general significance of Ulmer's findings, if proved correct, it may be no more than saying that any industry which declines economically in a relative or absolute sense will depend less and less over time on external sources of funds for a number of rather obvious reasons. If we then take a limited group of regulated industries, we would eventually get them in a period of decline in relation to the rest of the economy with these trends evident. However, the regulated industries may change in the future when new industries come into the picture which would offset the decline of others. This is what happens when we take the manufacturing sector, for example, with the trends in declining industries being more than offset by trends in expanding industries. This is an additional

reason why the gas industry should be included in view of its recent strong growth.

Although the foregoing comments are critical in nature, I would like to point out that Professor Ulmer deserves considerable credit for his willingness to draw sharp general conclusions from his study of the data. In doing so he exposes himself naturally to criticism, but at the same time stimulates considerable thinking concerning the subject, and this in itself is a worthwhile contribution. Finally, I would like to point out once more that much of the criticism may have to be revised in the light of the final data when it becomes available.

ELI SHAPIRO:* The current National Bureau project on trends in capital formation and their financing is providing and will provide the profession with essential historical information on one of the most important segments of economic activity. Apart from filling a vexing void in our understanding of economic growth in this country, the data should also provide some bench marks for purposes of comparing current developments with historical changes in the area of capital formation. Until such time as we develop a more precise set of analytical tools for assessing the direction and character of capital formation, we will, perforce, be restricted to comparing the present with the past in making judgments on the desirable and undesirable aspects of current capital formation. The data on the process of capital formation and the growth of capital in the United States may also be useful in supplying bench marks to which we can at least tie some hypotheses with respect to growth in a new and burgeoning field of economic interest—the so-called underdeveloped country. Last, but by no means least, the development of an organized body of information on capital formation could conceivably revolutionize the teaching of economic history by providing over-all data which could be employed to synthesize heterogeneous economic forces at work in different periods of our historical development.

Unfortunately, we must await completion of this study and the promised summary volumes to see how the various sectors in which capital formation has taken place tie together in order to assess the meaning, importance, and character of capital formation in our country.

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In a sense, one would hope that a partial solution to capital formation in agriculture in so-called underdeveloped countries might follow the pattern of development in this country. Since, as Mr. Tostlebee points out, much of the capital formation in land in the early period of the United States' economic development was accomplished with little need for funds, it is to be hoped that a repetition of this pattern in underdeveloped countries would enhance the productivity of the agricultural sector in those countries and, indeed, there is evidence that this is taking place. What are the ingredients necessary for this development? It seems reasonably clear that private ownership of land and the availability of unutilized frontier lands were the ingredients for encouraging self-financed capital formation by American farmers. However, one cannot view with equanimity the repetition of this process in other countries. Since the presence of underdeveloped lands, subject to the farmer's own handwork, is presumably not common among the countries I have examined, the problem of capital formation in land in underdeveloped countries may require co-operative funds designed to provide irrigation for such land. However, in so far as the effort of the landowner is responsible for the enhancement of the productivity of the agricultural sector, it is to be expected that the need for capital imports in agricultural countries would either be reduced or—assuming a given volume of capital imports—would enable the economies to use the imported funds in other ways.

A second point which warrants mention is the importance of internal financing in capital formation in agriculture. Indeed, it may be stated categorically that one of the most important features of all three papers is the stress placed on internal financing of capital formation over the first half of the twentieth century. The presence of the dominance of internal financing of capital formation is hard to rationalize in the light of the disproportionate space devoted to the role of financial institutions in the so-called business or corporate finance textbooks published as recently as the late forties or early fifties. These papers and their subsequent publications should serve to focus attention upon the enterprise itself as a dominant vehicle for financing capital accumulation and it is to be hoped that these findings will serve to highlight the inadequacies of present textbooks in business finance in describing the role of financing economic growth in our society.

One conclusion which I draw from these papers is the presence of

an enormous gap in our knowledge of the behavior and particularly the motives of management as they pertain to the decision-making process, with respect to earnings retention and dividend payout. Until and unless we have more fundamental knowledge about the factors considered in a definite dividend payout policy, we will be very much in the dark with respect to predicting the pace and character of capital formation in our country.

One wonders why the balance sheet changes reported by Dobrovolsky came about. The growing liquidity of manufacturing and mining corporations as reflected in an increasing current to total asset ratio deserves further exploration. In some senses an even more intriguing problem is posed by the post–World War II movement in the direction of an increase in the liquid to other current assets.

The relationship between internal funds and plant and equipment outlays reported by Dobrovolsky suggests the hypothesis of Dean and Terborgh that the ceiling for capital outlays is established by the volume of internal funds is correct. This finding too raises questions for further study which would advance our knowledge in the field of contracyclical policy.

Given no perceptible increase in capital outlays over the next five years and only small increases in inventory accumulation, it is not unlikely that corporations may be virtually insulated from the capital markets. Depreciation allowances will increase sharply as the asset base reflects postwar II prices for capital equipment. Even if higher dividend payouts are resorted to, there is one group of individuals genuinely concerned that internally generated funds will more or less care for business' need for funds. If this prediction is correct, what developments will arise to absorb personal savings in order to prevent a decline in economic activity?

In his discussion of the relationship between internal funds and capital outlays, this reviewer would hope that Dobrovolsky had spent more time on the absolute level of profits and capital outlays. For example, in 1949, corporate profits fell; however, inventory accumulation turned negative and capital outlays fell sharply. Thus a fall in profits was associated with financial ease for the manufacturing corporations. In 1952, a fall in profits was characterized by financial strain in the manufacturing industries, as capital outlays did not decline and rapid inventory accumulation characterized the industry.

It is not without interest to indicate that the manufacturing industry accounted for well over 50 per cent of the direct placements of securities during the postwar years. Finally, one of the more interesting findings of Dobrovolsky deserves particular attention. According to him there was no perceptible deterioration in the debt to asset position of the manufacturing and mining firm over the first half of the twentieth century. Thus, there is at least some substantive evidence to assert that much of the fears about an equity capital shortage in the postwar years and the expressed declamations about the building up of dangerous debt structures appears to have been more fiction than fact.

I regret that it is necessary, and I hope my remarks will not be considered petty playing with words, to comment on a matter of terminology contained in the Ulmer paper. He starts his paper by commenting on the shift away from external financing and the movement toward internal financing. He then concludes his paper with a comment about the trend toward debt and away from equity financing in the regulated industries.

In strictest accuracy and in fairness to Mr. Ulmer the latter comment pertains to new security issues. Yet, it should be remembered that internal financing *is* equity financing and, in so far as lenders are zealous about present and potential borrowers maintaining a "sound" capital structure as a requisite for obtaining loan funds, the debt issues referred to among the new security issues may have been made possible in part by the concurrent increase in equity resulting from retentions of profits plus depreciation allowances.

The secular shift from external to internal financing in the regulated industries resulted from the large capital requirements necessary initially to go into business. These capital requirements meant that outside funds had to be forthcoming if the enterprise were to be put into play. The regulated phase of the industries served as a stimulus for attracting capital funds. Once the firms were established, then retention of earnings could commence. Therefore, the secular decline in external financing, it is to be expected, would generate a high proportion of internal funds by virtue of the large volume of fixed capital employed in the regulated industries.

In connection with the postwar period, the large base for depreciation charges in the regulated industries provided a substantial inflow of funds via the depreciation allowances. Despite the fact that dividend payouts were higher among utilities than for the manu-

facturing sector, the depreciation allowances offset the major proportion of profits paid out in dividends so that, on balance, retained funds were a higher proportion of profits before taxes for the regulated industries than for most other industrial groups. Because the rate of utilities expansion was substantially greater than earnings, the regulated industries accounted for a larger share of corporate, long-term financing in most postwar years than was true of the manufacturing industries. Indeed, it may be argued that because capital expansion in the regulated industries was a much higher multiple of earnings than was true of the manufacturing industries it became necessary for the utilities to pay out a larger fraction in earnings in order to maintain a higher price-earnings ratio for the equities in the industry so that firms could tap the capital markets at more favorable rates in connection with their equity financing.

Mr. Ulmer comments on the possibility that the growth in internal financing resulted from an understatement of the capital consumption allowances. There is considerable evidence that company management did as Mr. Ulmer suggests. But, at the same time, there was a widespread feeling in the security markets that the reported earnings of the companies were inflated and, it has been argued by some, that the relatively low price-earnings ratios in the equity markets reflected the public's readjustment of the reported earnings figures. If this indeed was the case, the consequence was an enhancement of the cost of equity financing which, in turn, may have resulted in a hesitancy on the part of management to use external equity financing to as large an extent as might have been done.

The problem of debt financing in the regulated industries requires analysis at less than the subaggregate level. For example, railroad financing via bonded indebtedness since World War I can hardly be attributed to cost considerations alone, but also must result in a desire on the part of managements to trade on the equity. Incidentally, the statement that "regulation established a reward for trading on the equity which is very secure" could hardly be an accurate description of the fate which befell the railroad industry in the depression. The telephone finance figures in the late 1940's and early 1950's are misleading in the sense that this industry has had heavy resort to convertible debentures which have been, by and large, successful in that conversion into junior securities did take place. Technically it is true that, at the time of issue, they were debt issues, but it is hardly correct to treat them as debt in the traditional sense.

Another broad general theme which needs further exploration related to the relative cost of debt and equity. Here we come into the complicated problems that arise as a result of the state regulatory commissions. If the rate-making is designed to insure a given rate of return on total assets, then it is clear that managements in the regulated industries expose themselves to the greater risks implicit in debt financing in order to take advantage of the leverage factor in securing higher returns on the outstanding equity. If the capital structure consisted exclusively of equity funds and utility rates were based upon a given rate of return on total assets, the higher cost of equity money would reduce the returns on capital stock outstanding.

MONEY MARKET DEVELOPMENTS AND PROSPECTS SINCE THE "ACCORD"

MONEY MARKET DEVELOPMENTS—FROM THE "ACCORD" TO MID-1952*

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MY TASK IN THIS OVER-ALL REVIEW of recent money market developments and prospects is to discuss with you what happened during the period immediately following the Treasury-Federal Reserve accord in March, 1951. Such a discussion is more meaningful when considered in relation to developments just prior to the accord. So therefore let me first review with you briefly those earlier developments.

Even before the outbreak of hostilities in Korea in June, 1950, the nation was making a pronounced recovery from the recession of 1948–49. Industrial production had begun to increase again in the fall of 1949 and non-agricultural employment in the early spring of 1950.

You all remember how Korea stimulated spending. Consumers and businesses drew down their cash balances and found easy access to borrowed funds at banks and other lending institutions. Financial institutions were able to increase their loans to private borrowers and add to their investments in corporate and municipal securities by selling government securities in the market at prices supported by the Federal Reserve.

In these circumstances, the federal government relied first on an anti-inflationary program based mainly on fiscal and monetary measures. Taxes were increased; Federal Reserve rediscount rates and reserve requirements were raised; and selective credit controls on consumer instalment credit, certain types of real estate credit, and stock market credit were imposed or tightened.

The restrictive effects of credit-restraining measures taken at that

* This paper by Albert R. Koch and the following three papers by G. Walter Woodworth, Madeline McWhinney, and Roy L. Reierson were presented at a meeting of the American Finance Association in Detroit on December 30, 1954. The program was under the chairmanship of Paul W. McCracken, University of Michigan.

time were greatly diminishd by continued Federal Reserve purchase of government securities in order to assure the success of Treasury financing and to maintain the prices of government bonds. Such action aggravated the credit-restraint problem in several ways. In the first place, the maintenance of high prices, and consequently low yields, on government securities provided an added inducement to investors to shift their funds out of such low-yielding securities into higher-yielding ones. Secondly, continued Federal Reserve purchases of government securities provided a ready market for sellers of such securities at stable prices. And finally, such Federal Reserve action resulted in an addition to the supply of bank reserves which became the basis for a potential multiple expansion in bank credit and the money supply. This potential credit and monetary expansion became an actual one because of the large and pressing demands for funds present at the time.

In the ten months following the Korean outbreak, from mid-1950 through April, 1951, Federal Reserve holdings of government securities increased on balance by about $4.5 billion. The expansionary effect of this increase and other factors on bank reserve positions was offset to some extent by a substantial outflow of gold and by an increase in reserve requirements. Even so, available member bank reserves rose by about $1 billion, bank credit by about $4 billion, and deposits and currency by about $5 billion over the period. This expansion in bank credit and the money supply, along with a rise in the turnover or rate of use of deposits, resulted in a sharp inflationary upsurge, with wholesale prices increasing by about one-sixth and consumer prices by about one-twelfth.

In the early months of 1951 more restrictive monetary measures were adopted; direct controls were imposed on prices and wages; and the allocation of goods in short supply was strengthened. In the monetary field, selective regulations of stock market and real estate credit were strengthened and a voluntary credit restraint program inaugurated. Undoubtedly the most significant step taken in this field, however, was the restoration of Federal Reserve open market operations in government securities as an effective measure of credit regulation following an accord between the Federal Reserve and the Treasury. On March 4, 1951, the Secretary of the Treasury and the Chairman of the Board of Governors of the Federal Reserve System announced that "the Treasury and the Federal Reserve System have reached full accord with respect to debt management and monetary policies to be pursued in furthering their common purpose

to assure the successful financing of the Government's requirements and, at the same time, to minimize monetization of the public debt."

The first step under the Treasury-Federal Reserve accord was the exchange of marketable, long-term, 2½ per cent government bonds for new, long-term, 2¾ per cent bonds that were not directly marketable but were convertible into five-year notes bearing 1½ per cent interest, a rate below that prevailing in the market at the time for the same maturity of government issue. This exchange operation, by removing a large block of long-term bonds from the market supply, prepared the way for discontinuance of Federal Reserve purchases of government bonds in support of their prices.

After the announcement of the accord, the short-term government securities market was largely without Federal Reserve support. The System did purchase some short-term government securities at times of peak seasonal needs for reserves by the banking system and, in the beginning, at times of Treasury refunding operations, but at other times during the year it sold securities. As a result of this change in Federal Reserve operations in the short-term government securities market, Treasury bill yields fluctuated more widely than previously but generally remained somewhat below the Federal Reserve discount rate of 1¾ per cent.

Following the accord, the Federal Reserve continued for a time the purchase of long-term government bonds in large volume in order to facilitate the Treasury exchange offering. At the outset, these purchases were made at fixed prices, but after a few days, System purchases were reduced and prices of the bonds moved downward. After the exchange offering was completed, very moderate purchases of long-term government securities by the Federal Reserve were sufficient to prevent the development of disorderly conditions in the market for such securities. After June, 1951, practically no long-term bonds were bought. Any bank or other investor wishing to sell long-term government securities had to depend on private buyers in the market, and the play of market forces resulted in some fluctuation, as well as some rise, in rates on such securities. During the last half of 1951, when the bond market was completely on its own, prices of long-term government bonds fluctuated between 95 and 99. The failure of government bond prices to drop more precipitously than they did after the accord was in sharp contrast to widely held earlier views that the withdrawal of Federal Reserve support would lead to disastrous declines in prices and disorderly market conditions.

The main economic effects of the accord were on interest rates and security prices, and hence on the availability of loanable funds and general liquidity of the economy. Whereas before the accord all U.S. government securities regardless of maturity, and for that matter many types of private obligations, were the equivalent of ready cash, afterward many such securities were not readily exchangeable into money or higher-yielding investments at the will of the holder and without some capital loss. This development decreased the willingness, and in some cases even the ability, of institutional investors to switch investments and to make new loans. It also made consumers and businesses more desirous of retaining their existing cash balances rather than spending them.

In the year following the accord, there began a general reaction from the overbuying, overpricing, and overborrowing of the previous months. In general, price stability prevailed, although with important variations in prices of individual products. Federal defense expenditures increased sharply, and consumer expenditures for non-durable goods and services rose moderately. The total of business and consumer spending for durable goods, however, showed little change, and the rate of accumulation of business inventories was substantially reduced.

Private credit expansion continued, but at a greatly reduced rate. Although corporate security issues increased as a result of the need to finance expanding defense activities, the rate of expansion in mortgages, consumer credit, bank loans to businesses, and borrowing by state and local governments slackened considerably, notwithstanding continuing strong demands. Bank credit to finance business activities related to defense continued to expand sharply, but other business credit changed less than seasonally. The federal government also became a borrower again during this period.

Demand deposit and currency holdings of businesses and individuals rose further by about $7 billion, or 6 per cent, in the year following the accord. Savings deposits also increased substantially. This growth in deposits reflected in part increased needs for money growing out of expanding economic activity as well as larger requirements for liquidity in money form due to the diminished liquidity of government and other security portfolios.

The rise in deposits was made possible mainly by the continuing credit expansion, particularly a turnabout from bank sales to bank purchases of government securities, and a shift from a gold outflow from the United States to a gold inflow. To some extent the growth

in bank holdings of government securities reflected the attractiveness of higher interest rates on such securities, which encouraged banks to hold them rather than to try to find other uses for their funds. To some extent, it also reflected a desire on the part of banks to maintain liquidity, since their longer-term securities were not as liquid as they had been under the support program.

In the year following the accord, Federal Reserve holdings of government securities declined somewhat on balance. Bank reserves were supplied during the year by nearly a $2 billion inflow of foreign funds but were absorbed by a $1½ billion outflow of currency into circulation. The changes in Federal Reserve operations in the government security market, coupled with continuing large and pressing private demands for credit and capital, necessitated increased reliance by member banks on borrowing from the Federal Reserve Banks. This was the first time banks had to resort to such borrowing to any significant extent since the early 1930's, a development that tended to revitalize the use of the discount mechanism as an instrument of credit restraint. Since not only are banks generally averse to borrowing, but also the Federal Reserve tries to discourage continuous borrowing, this development tended to augment the existing restraint on credit and deposit growth.

Open market rates of interest and bond yields rose considerably in the first half of 1951, mainly after the announcement of the accord. Thereafter, they fluctuated largely in response to seasonal market forces, with only a moderate tendency to rise. The interest rates charged by banks to prime business customers, the so-called "prime rate," rose another half per cent, from 2½ to 3 per cent, in the fall of 1951, following similar rises in late 1950 and early 1951. Many other bank rates of interest and some private open market rates also rose during this period, reflecting to some extent the increase in the prime rate.

In summary, in the period from the accord to mid-1952 for the first time in many years financial flows and interest rates began to reflect mainly market forces of supply and demand for funds of different maturities. Federal Reserve activity in the government securities market began more and more to be aimed at gearing the changes in the volume of bank reserves, credit, and money to the seasonal and growth needs of the economy. Such activity also tended to be countercyclical, since demands for funds vary with the state of the business cycle. In addition, the discount mechanism again became a useful handmaiden to Federal Reserve open market opera-

tions in government securities in the exercise of credit and monetary restraint.

These developments, in my opinion, tended to restrict somewhat the flow of funds to marginal borrowers, to reduce the liquidity of spenders and lenders, and to lessen both the disposition and ability of spenders to spend and lenders to sell U.S. government securities in order to extend credit to others. These developments also tended to decrease expectations of further depreciation in the value of the dollar on the part of foreigners as well as our own citizens, thereby diminishing the intensity of the search for inflation hedges and strengthening the willingness to retain liquid savings. In these ways, more freely functioning financial markets and more flexible Federal Reserve credit and monetary policies contributed to the dampening of inflationary pressures and the achievement of sustainable economic growth.

MONEY MARKET DEVELOPMENTS, MID-YEAR 1952 TO MID-YEAR 1953

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DEVELOPMENTS IN THE MONEY MARKET cannot meaningfully be viewed from a narrow, technical standpoint. Instead, they should be seen against the backdrop of basic economic conditions. Let us, therefore, begin the analysis of the second period—mid-1952 to mid-1953—by having a look at a few of the more important economic indicators.

In general, the period may be characterized as one of continued expansion of economic activities without commodity price inflation. Mr. Koch has detailed the expansion that began in early 1950 and carried through to mid-1952. The next period was in essence more of the same with culmination at the peak level of all time in mid-1953. Some evidences of impending recession appeared during the second quarter of 1953.

More concretely, between mid-year 1952 and mid-year 1953, gross national product rose from $345 billion to $372 billion (annual rates), or by 8 per cent. All components of GNP contributed to the expansion—personal consumption, private investment, and government purchases. The most active contribution was made in the form of additions to business inventories, thus setting the stage for the recession to follow. Other measures of the expansion are the 15 per cent rise of industrial production and the 11 per cent rise in manufacturing employment (Federal Reserve indexes). The value of the dollar remained almost constant. A rise of about 2 per cent in consumers prices was offset by a small decline in wholesale prices.

As one would expect, the expansion of GNP was financed by an increase in the main monetary and banking series. Total loans and investments of all commercial banks rose about 3 per cent which created a similar increase in the money supply (currency and demand deposits). In addition, money was spent somewhat more actively, as evidenced by an increase of 3.5 per cent in the turnover of demand deposits.

Analysis of the money market likewise discloses a continuation of tendencies that had their origins in the preceding period dis-

cussed by Mr. Koch. The outstanding feature was one of the sharpest increases in money rates on record, the bulk of which took place between October, 1952, and June, 1953. Treasury bill rates rose from 1.7 per cent to 2.4 per cent; open market commercial paper rates from 2.31 per cent to 2.75 per cent; U.S. long-term bond yields from 2.74 per cent to 3.09 per cent; and Moody's AAA bonds from 3.01 per cent to 3.4 per cent. Of course, this meant a disturbing break in bond prices which gave rise to the quip that the United States Treasury 2½'s of 1972–67 would break 90 before Ike could do so. I do not know whether Ike won or lost this battle, but the 2½'s did drop below 90 in June, 1953. As you are well aware, they have since recovered to about par.

Now wherein lies the explanation of this sharp rise in money rates? A superficial answer can be given in terms of the net reserve position of the member (commercial) banks which is defined as the difference between excess legal reserves and borrowings at the Federal Reserve Banks. Statistical studies have established a close inverse correlation between the net reserve position of the banks and the level of money rates. That is, when it is necessary for the banks to borrow increasing amounts from the Reserve Banks to meet legal reserve requirements, rates usually move upward. This situation reflects the ascendancy of demand factors over supply factors in the credit market, combined with reluctance of the banks to be in debt to the Federal Reserve. Moreover, this attitude of reluctance may be re-enforced by a rise in the Federal Reserve discount rate. On the other hand, when excess legal reserves are piling up in the hands of member (commercial) banks, rates usually move downward. Supply factors are in the ascendancy. Banks bid down yields on secondary reserve assets and offer loan money more freely at lower rates in an effort to increase income.

For nearly two decades prior to mid-1952 excess reserves substantially exceeded borrowings at the Federal Reserve, that is, a net reserve surplus existed. This meant that the supply of loan money was readily available at low rates. But beginning at mid-year 1952 an almost forgotten phenomenon appeared once again in the form of "net borrowed reserves." Borrowings at the Federal Reserve rose sharply and fluctuated between $1 billion and $1.5 billion until late May, 1953. Net borrowed reserves ranged between $400 million and $1 billion.

The amount of net borrowed reserves, however, constitutes only a partial measure of the diminished liquidity of commercial banks.

Their secondary reserve position must also be included if the view is to be complete. The record reveals that commercial banks included in the Treasury's monthly survey held $6.7 billion less U.S. securities with maturities under five years and $3.1 billion less maturing within one year on May 31, 1953, than on June 30, 1952. Between the same dates their holdings of U.S. securities with maturities of five years and over increased $3.8 billion. In addition, the market prices of their enlarged holdings of intermediate and long-terms declined well below par, and below cost in most cases. Thus, bank loans could be increased only by borrowing more reserves, by further reduction of short-terms, or by selling securities at a loss. A marked deterioration in bank liquidity had indeed taken place.

The Federal Reserve discount rate was raised from 1¾ per cent to 2 per cent in January, 1953. This, together with the diminished bank liquidity just cited, was concrete evidence of an active, rather than a passive, role by the Federal Reserve in regulating the money market. They feared overexpansion and inflation of commodity prices during this period, and therefore approved conditions that resulted in rising interest rates.

This brings us to the deeper question: What underlying factors were responsible for the "net borrowed reserve" position of the member (commercial) banks during this period? In view of the emphasis usually placed on the restrictive policies of the Federal Reserve, it may surprise some of you that the positive forces behind member bank borrowing originated in the free market, and that the Federal Reserve used its powers mainly to soften the effects of these market developments. In fact, money rates would have been much higher had the Federal Reserve banks not purchased a substantial amount of United States securities—about $1.3 billion between mid-year 1952 and May, 1953. This partially offset a decline of the gold stock of $0.8 billion and an increase of currency in circulation of $1 billion.

Another strong influence contributing to higher rates was the intensity of demand for loanable funds by business corporations, individuals, and governmental units. During the first half of 1953 they raised about $11 billion net of retirements—$1.5 billion more than in the first half of 1952. Commercial bank loans rose by nearly $6 billion between mid-year 1952 and mid-year 1953. The flow of current saving was large, but still not sufficient to meet the heavy demand for funds.

Moreover, the investment market was confronted with great un-

certainties, especially during the second quarter of 1953. It appeared likely that the Treasury would have to raise between $9 and $12 billion of new money during the second half on top of a heavy private, state, and local demand. This was against the background of repeated Federal Reserve and Treasury statements with regard to the new era of a free market for government securities, the intention to lengthen maturities and to follow sound money policies. The Treasury had issued the 30-year 3¼'s on May 1 in line with its well-heralded program of extending maturities. Would more long-terms be offered in the near future in competition with private demands? Also, would the Reserve authorities release reserves to commercial banks to finance both Treasury needs and the seasonal expansion of loans and currency during the second half? These uncertainties prompted some borrowing in anticipation of still higher rates to come, thereby magnifying the upward pressure on rates.

In summary, the period from mid-1952 to mid-1953 may be characterized as one of intense prosperity without commodity price inflation, accompanied by sharply rising interest rates. The higher rates grew out of large demands for credit over against a restricted supply of loanable funds in the hands of commercial banks. The restricted supply in turn arose from a substantial increase in currency in circulation combined with a reduction in the gold stock. Confronted with these conditions and fearing overexpansion, Federal Reserve authorities held the reins on credit supply taut by releasing more reserve money sparingly, with the result that the liquidity of commercial banks was materially reduced.

MONEY MARKETS DEVELOPMENTS JUNE, 1953, TO DECEMBER, 1954

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THE TERM "MONEY MARKET" has a dual connotation. It is sometimes used to refer to the total supply and demand for funds and at others to the short-term market exclusively. Mr. Koch and Professor Woodworth have chosen to discuss money market developments in the first or broader sense. I also shall direct my remarks toward that end, but if the picture of what has happened to the cost and availability of credit in the past eighteen months is to be made clear, some time needs to be devoted to the money market in the shorter or more technical respect. As you all know a dramatic change occurred in money market conditions in mid-1953. The most important factor behind that change was a shift in Federal Reserve policy. The objective of the change in System policy in 1953 was to provide support for the economy by the creation of a monetary climate favorable to credit expansion and capital expenditure in the broadest sense, but the System's influence has been exerted in the short-term market. From there it has fanned out to all other sectors of the credit structure. I should like, therefore, to describe for you briefly what the System's policies and programs have been since mid-1953 and then to outline what in my opinion the effect of these policies has been on the money market and the economy in general.

In discussing the Federal Reserve System it is convenient to use June, 1953, to mark the change in System policy from one of credit restriction to one of monetary ease since a reversal of money market conditions did occur within that month. But actually a major shift of policy seldom occurs overnight. In the latter part of April, 1953, the System became aware that, as the combined result of restrictions on the amount of Federal Reserve credit made available to the banking system and heavy demands for credit, the money and capital markets were becoming tighter than was intended or desired. At the same time there were beginning to be signs that a business re-

* The views expressed represent those of the author and not necessarily those of the Federal Reserve Bank of New York.

adjustment might be in the making because of inventory accumulation and prospective cuts in defense expenditures. Early in May, therefore, the System began to purchase increasing amounts of Treasury bills in the open market. But the market was slow to realize the significance of these operations in the face of other strong tightening forces, and credit conditions continued to firm and money rates to rise until June 2. On that day a dramatic reversal of market psychology occurred. Short-term security prices steadied and then began to rise, and were followed, with a lag, by long-term issues.

As June progressed, it became increasingly clear that business readjustment was in prospect and that if the Treasury's financing needs were to be met without putting an undue strain on member bank reserve positions, the volume of reserves available to the banking system would have to be increased substantially. Also, despite the fact that the System Open Market Account was continuing to make large weekly purchases of Treasury bills, the security markets remained "thin" and uncertain. On June 24, therefore, the Board of Governors of the Federal Reserve System announced that member bank reserve requirements would be reduced in instalments commencing on July 1.

As the summer and fall of 1953 progressed, business activity did level off and begin to decline. With that decline Federal Reserve policy gradually shifted to one of "active" ease under which a program of providing the banks with reserves in advance of needs was aggressively pursued. The changes in the directives given by the Federal Open Market Committee to its executive committee serve as a convenient summary of the shifts in System thinking and policy during 1953. In March the directive had said in part that open market operations were to be conducted "with a view to exercising restraint upon inflationary developments." In June this instruction was changed in part to read that the operations should be conducted with a view "to avoiding deflationary tendencies without encouraging a renewal of inflationary developments." In September it read merely with a view to "avoiding deflationary tendencies." By December the objective had become the promotion of "growth and stability in the economy by actively maintaining a condition of ease in the money market."

As had been intended, the reduction of reserve requirements in July, 1953, largely brought an end to the market's uncertainty concerning Federal Reserve policy. The short-term money market

eased, member banks were able to reduce their borrowings from the Federal Reserve Banks, and the security markets took on a firm tone. The System, therefore, remained on the sidelines for several weeks. In the fall, however, in order to prevent the usual seasonal demands for short-term credit and for currency from tightening the credit structure, the System again entered the open market and purchased outright $829 million of bills. In addition, the Federal Reserve Bank of New York took several hundred million dollars of securities temporarily from dealers under repurchase agreements.

After Christmas, to prevent the volume of reserves in the market from becoming excessive relative to current demand as the result of the heavy post-holiday return flow of currency, all of these repurchase agreements were allowed to run off and the System sold $758 million of bills outright. In January, 1954, the Reserve Bank discount rate was reduced from 2 per cent to 1¾ per cent and then in April to 1½ per cent. These reductions served not only to bring the discount rate into line with other market rates which had already declined in response to the System's policy of ease, but also to give additional emphasis to that credit policy.

In the summer of 1954 the Treasury's financing program threatened to exert a tightening influence on the money market, so the Board of Governors announced another reduction in reserve requirements, effective in instalments from the middle of June through the first of August. But since the Treasury's prospective requirements were neither so imminent nor so large as they had been in the summer of 1953, the System temporarily absorbed some of the newly freed reserves by selling securities in the open market or allowing its holdings of maturing Treasury bills to run off.

The System's program for reabsorbing reserves gave rise to some temporary problems. For the most part, initially at least, it drew reserves from the larger banks in New York and Chicago. But as the result of the reduction in member bank reserve requirements and some large-scale Treasury operations at the beginning of August, the largest part of total member bank free reserves were held by the country banks. Thus, while the total volume of free reserves held by the member banks remained at relatively high levels as the System withdrew reserves, the New York and Chicago banks found themselves with reserve deficiencies. If, therefore, the large New York and Chicago banks were to avoid heavy borrowing from the Federal Reserve Banks to meet these losses they had to find some way of drawing the idle reserves from country banks. The mobilization of

these latter reserves was slow. The amounts held by most individual institutions were small and in view of the expected fall pick-up in the demand for credit and the currently low money market rates, the country banks tended to hold their excess reserves idle in their reserve accounts with the System. But as the pressure on the large banks increased, rates rose to the point at which it was possible to attract outside sources of funds, and gradually a better distribution of reserves was achieved.

In the fall, as reserves were needed to meet the Treasury's financing requirements and business demands for accommodation, the System fed back through open market purchases the reserves that it had absorbed through security sales and redemptions in July and August. The return of these reserves to the market was not, however, a steady process, and on occasion caused some misunderstandings. At times fluctuations in the volume of float outstanding, in Treasury deposits with the Reserve Banks, and in other factors which affect bank reserves caused wide short-term swings in the supply of reserves available to the banking system. The Federal Reserve as a matter of policy stepped in to help moderate these fluctuations, and the sales or redemptions of Treasury bills that were dictated by these short-term money market considerations did not represent any basic change in Federal Reserve policy. To facilitate these money market adjustments the System on a few occasions bought or sold bills for "cash," i.e., payment and delivery on the day of the sale instead of the following business day as is customary in "regular" deliveries—an innovation in the System's open market operations, designed to give them more immediate effect when that was desirable.

This quick review brings us up to date. Now, what have been the results of the Reserve System's program and policies since mid-1953? One of the facts of life with which you have to live in central banking is the impossibility of proving the exact effect of any particular operation. No control case exists, and debt management, tax policies, and many other factors exert a simultaneous influence. But the shift in System policy must certainly be given a large part of the credit for the changes in the cost and availability of credit that have occurred since mid-1953 and for their effects on economic activity.

Credit has been plentiful, and its cost is down. Both the long- and short-term markets have been well supplied with funds and have had a feeling of confidence. Borrowers have been encouraged to come into the markets and lenders to take on new commitments. The

money supply has expanded, and the Treasury has been given more "elbow room" in which to manage its debt operations.

Looking at the cost side, while we find that the bank loan rates have been somewhat sticky, almost all other rates are down substantially. The average issuing rate on Treasury bills, as Professor Woodworth pointed out, had risen to 2.4 per cent at the height of the credit stringency in 1953. During most of this year it has averaged 1 per cent or less. Yields on long-term government bonds, taxable 12- to 15-year issues, have declined from 3.09 per cent in June, 1953, to less than 2.5 per cent. Yields on high-grade municipals have been reduced from 2.99 per cent to 2.23 per cent; those on corporate bonds have followed a similar pattern. In the mortgage field GI and FHA paper was being sold at discounts in the spring and on into the summer of 1953, but in several areas it has commanded a premium in recent months.

As far as bank reserves are concerned, the statistics indicate that in the spring of 1953 member banks were borrowing heavily and that their borrowings on the average exceeded their excess reserves by $600 million or more. This year the contrary has been true. In recent months member banks have on the average held $600–800 million of free reserves.

Early in 1953 the demands made on insurance companies, savings banks, and other institutions for long-term credits exceeded the volume of savings flowing to them, and in the existing market they were reluctant or unable to sell enough government securities to meet all demands. Builders, as a result, complained of a shortage of mortgage funds, and while exact tabulations are unavailable, it is certain that several state and local authorities and a number of business corporations who had planned to float new issues postponed them. A definite brake seemed to have been put on construction. For their part, the commercial banks were servicing old customers, but they were not seking new business. They were scrutinizing unusual requests closely, and they were net sellers of securities. This year, in contrast, with reserves plentiful, the commercial banks have been out aggressively seeking new business and adding to their investment portfolios. Institutional investors have thus been able to shift federal government and municipal obligations to the commercial banks and replace them with new mortgages and other higher-yielding investments. As a result, although 1954 was a year of business recession, residential building rose to an all-time peak. Non-farm

mortgage recordings, for example, were roughly one-third larger in number and nearly twice as large in dollar volume as in the boom year of 1948. New municipal and municipal-type security issues were more than one-third larger in dollar volume than in 1952 and nearly two and a half times as large as in 1948. New corporate security offerings were also close to record levels; and, of course, few held borrowed funds idle.

Thus, while no one can reasonably claim that credit policy alone can smooth out the business cycle, money market developments in the broad sense over the past eighteen months have indicated that credit policy can do much to moderate a business readjustment and to provide support for the economy.

FACTORS AND PROSPECTS IN THE MONEY MARKET

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THE PAST FEW YEARS have constituted a most educational period in the history of the money market in the United States. One of the major results of the Treasury Federal Reserve accord of March, 1951, was to make interest rates more responsive to fluctuations in economic conditions. Since that time, the economy has passed through a moderate cyclical movement encompassing a rise to the peak of a boom, a subsequent decline and, now, signs of a renewed advance. With a flexible credit and debt management policy, the monetary authorities have taken a more active part in influencing the behavior of interest rates, and Federal Reserve policy has ranged from restraint to active ease. Debt management has adapted its techniques to changing economic conditions while the financial markets have demonstrated considerable sensitivity to shifts in business conditions and credit policies.

Since the relationships among the many factors acting upon interest rates are affected with considerable complexity and interdependence, any appraisal of the money market outlook must be subject to a broad margin of uncertainty. However, the experience of the past several years has illuminated some of the guiding principles which may be expected to operate in the money market under present and prospective conditions, and these lessons of the recent past may provide some clues to reading the future.

INFLUENCE OF ECONOMIC CONDITIONS

Perhaps the most far-reaching development of recent years is the renewed freedom of interest rates to respond to changing economic conditions. This general coincidence of business and interest rate movements is not, however, a new feature in our economy. Over much of the 1920's, practically every significant change in industrial production was mirrored in short-term rates. Long-term rates, on the other hand, were not greatly affected until the closing years of the decade, when restrictive credit measures were applied in an effort to curb speculation.

More recently, both long- and short-term rates have tended to move in harmony with general business indicators, rising to a peak in the first half of 1953, declining—as did economic activity—through the early months of 1954, and leveling off thereafter as production stabilized. The improvement in business in the last quarter of 1954 was again accompanied by some slight firming of rates both in the bond and the money markets.

That short-term rates should fluctuate with business conditions is not surprising, since changes in production and sales almost necessarily affect business borrowings from the banking system for inventory and other working capital purposes. Indeed, sensitivity of bank reserve positions and money market rates to shifting demands for funds is a prerequisite to an effective policy of general credit control.

It is perhaps less immediately obvious that long-term rates should also move in sympathy with the economic trend, since the supply of new savings and the demand for investment funds are both related to the level of employment and output. Developments in recent years, however, have demonstrated a tendency of aggregate demands for investment capital to fluctuate fairly substantially with the general trend of economic activity, rising to a peak in 1953 and subsiding thereafter. The supply of investment funds, especially the volume flowing to the strategic institutional investors, has been less volatile; presumably contractual savings, including purchases of life insurance, amortization mortgages, and contributions to pension funds, provide an element of more stable growth. As a result, changes in investment requirements, under free market conditions, have been reflected in the behavior of bond prices and long-term interest rates as well as in the money market.

Furthermore, recent and current conditions have evidenced a greater interrelationship of long- and short-term rates than was the case in earlier decades. Institutional investors, especially life insurance companies and mutual savings banks, have for several years been net sellers of government securities in order to raise funds for private investment, whereas the commercial banks have been net buyers in periods of credit ease and have tended to lighten their portfolios when demands for bank loans were rising. Commercial banks, through their investment operations, have provided a link to the institutional market; trends in commercial bank credit have occasionally had a bearing upon the liquidity of the government portfolios of long-term investors.

Under current and foreseeable conditions, therefore, it seems permissible to conclude that business conditions remain the basic determinant of the trends in interest rates. Changes in business activity are likely to be accompanied by movements, in the same direction, of interest rates in general. Short-term interest rates tend to be more immediately responsive to changes in business conditions than are bond yields, but if business expansion progresses to a point where credit becomes progressively tighter, all classes of interest rates are likely to be affected.

Role of Credit Policy

While the general direction of interest rate movements is likely to be established by trends in business, and especially in the demands for bank credit and investment funds, government policy may be of substantial influence in determining the pace of change and the limits of rate fluctuations.

The basic objectives of government economic policy, namely to promote rising levels of production and living standards, are well known. The present Administration stresses the importance of the private sector of the economy in working toward this goal, and consequently emphasizes the encouragement of investment spending by individuals, businesses, and state and local governments. Furthermore, the Administration is dedicated to maintaining the purchasing power of the dollar, which involves striking a neat balance between inflationary and deflationary pressures.

In striving toward these goals, the Administration has assigned major importance to credit control and debt management. This program means that the promotion of economic growth is to be sought in fostering an environment favorable to investment activity. It means that the flow of funds available for investment is not to be impaired lightly, and implies a predisposition toward as low a level of interest rates as can be maintained without contributing to excessive investment or inflationary pressures. At the same time, maintenance of a favorable investment climate is not intended to bar the use of credit and debt management policy to exercise restraint if such action is deemed appropriate.

Within this general framework, the Federal Reserve authorities since the March, 1951, accord have assumed increased responsibility for promoting conditions conducive to stable economic growth. The authorities are now in a position to shape policy according to current conditions in the economy and, indeed, have a positive obli-

gation to do so if credit policy is to contribute to a healthy economy. As a general guidepost, they have employed policies designed to permit interest rates to rise and credit to tighten in a period of business expansion, and to accentuate the easing of credit in a business decline. The authorities have indicated their conviction that these policies have been effective in the recent past: they are committed to the continuing exercise of their powers to tighten or ease credit in response to changes in business conditions and prospects.

Benchmarks for Credit Control

This sweeping generalization regarding the fundamental principles of current credit policy should not be taken to mean that Federal Reserve action is guided by a simple rule of thumb. On the contrary, recent experience has rebutted the notion, still widespread, that credit policy has some simple benchmark, such as money supply, commodity prices, or unemployment, against which its course can be predicted and its effectiveness assessed. There may be exceptional occasions, such as the incandescence of inflation or the spiraling of credit contraction, when the course of credit policy is clearly indicated, but in most instances, determining the direction and intensity of credit measures requires careful scrutiny of developments in many sectors of the economy.

The volume of money assuredly occupies an important place among policy criteria. The authorities have stated their intention to assure that bank reserves are adequate to support a growth in the money supply consistent with the needs of an expanding economy. The normal rate of increase tends to be estimated around 3 per cent a year. However, the monetary authorities are not dedicated to a simple quantity theory or to an automatic increase in the money supply at a steady rate, rather they weigh the requirements for money against the background of economic conditions in general.

The behavior of commodity prices is regarded as another conventional benchmark for credit policy, especially with regard to the presence of inflationary or deflationary tendencies. Based on the notion that commodity price trends signal the presence of inflationary or deflationary tendencies, the Federal Reserve has been exposed to some criticism for permitting credit to tighten in early 1953 when commodity prices were generally stable. However, while price indices provide important information on current conditions, their behavior, by itself, does not suffice for informed economic diagnosis in our complex system.

Labor market conditions, including employment and unemployment, are another area of the economy with which the monetary authorities are necessarily concerned, but, again, trends here are not exclusive guides to credit policy. There is little doubt that changes in the level of unemployment are regarded as an important indicator of general business conditions and are followed with care, but the authorities apparently do not share the extreme view that a policy of energetic credit ease should be carried out as long as unemployment is above some irreducible minimum.

Additional salient criteria for credit policy are supplied obviously, by trends in industrial production, both in the aggregate and in its main components, by information on business inventory policies, by the pace of new orders and sales, and by the developments in the various fields of investment and business equipment spending. Throughout, an evaluation of the past record must be blended with an appraisal of the outlook.

Changes in financial conditions are also relevant in gauging the condition of the economy and the responsibilities of the Federal Reserve. Excessive expansion in consumer debt and in home mortgages, for instance, could conceivably create a burden for borrowers and contribute to subsequent reductions in economic activity. Developments in the field of business credit, and particularly trends in borrowing for inventory accumulation, are equally significant for the business and credit picture. Thus the Federal Reserve authorities are constantly preoccupied with the amount and use of various types of credit in our economic system, including the distinction between the use of credit for speculative and for productive purposes. Finally, recent experience has reaffirmed the necessity for the authorities to give continous heed to credit conditions and to the effects of their own actions upon bond and money markets.

A corollary requirement, of course, is that the credit markets be sufficiently sensitive to changes in economic conditions and credit policies. Since the Treasury-Federal Reserve accord, bond prices and money market rates have enjoyed greater freedom of movement than was the case previously, and changes in the appraisals and expectations of the market place have again become significant in interpreting the outlook. An example may be found in the experience of the financial markets in the spring of 1953, when the evidence that credit was becoming uncomfortably tight contributed to a change in credit policy. Even though open-market operations are

limited to Treasury bills, it is evident that the Federal Reserve authorities take cognizance of developments in all sectors of the market place and of the whole spectrum of interest rates.

This complex of factors that enter into shaping credit policy suggests that policy changes are usually likely to be slow and gradual rather than sudden and dramatic. Because of the time required to gather economic data, interpret trends, and take action, there is some time lag between changes in economic conditions and the response by the monetary authorities; some further time usually must pass before credit action can take hold. In order to narrow this gap, minimize the need for forecasting, and reduce margins of error, the authorities are tending to let policy changes develop slowly through subtle gradations, evident only in retrospect, in the degree of tightening or easing permitted in the market place. However, this does not rule out the possibility of blunt and drastic measures if events raise the need for swift and vigorous action.

The Federal Reserve and the Treasury

Another important consequence of the March, 1951, accord was to establish a new basis for the relationship of Federal Reserve credit policy to Treasury debt management. As a matter of policy, the Treasury is now committed to meeting the test of the market place in its financing activities. The credit authorities have provided reserves to the money market in periods of Treasury financing but for the past two years they have refrained from supporting Treasury exchange operations by trading either in maturing obligations, or in comparable maturities, or in when-issued securities. The Treasury, in turn, has been increasingly successful in designing offerings that have met with favorable market reception.

Treasury debt management policy in the past two years has been directed toward lengthening the maturity distribution of the debt, simplifying the debt structure, and reducing the frequency of future refinancing operations. An underlying purpose has been to establish greater freedom of action for credit policy. At the same time, the Treasury has recognized the implications of its financing activities for the state of business and has demonstrated growing flexibility in adjusting techniques to changing economic conditions. In the spring of 1953, when industrial production was breaking all previous records, the Treasury issued a relatively small amount of long-term marketable bonds as part of its program of extending maturities. With the easing in business after mid-1953, the Treasury refrained

from offering additional long-term bonds to the market and instead sought to induce holders of maturing obligations, especially the commercial banks, to accept intermediate-term securities in exchange.

Despite this adaptation of recent Treasury financing practices to economic conditions, it must be recognized that debt management, in contrast to credit policy, is a fairly cumbersome tool for promoting economic stability. Treasury debt operations must be publicly announced, the financial markets tend to be highly sensitive to the Treasury's plans, and adjustments in bond prices and interest rates are often quite sharp. Credit policy, on the other hand, enjoys far superior flexibility, it can be sustained, intensified, or moderated on a continuing basis, and need involve no public pronouncements that might unsettle the market place. Consequently, the experience of the recent past supports the conclusion that in striving for stable economic growth, the greater reliance is likely to be placed upon Federal Reserve credit policy rather than upon Treasury debt management.

Government Financing Programs

Recent years have demonstrated the growing importance of credit insurance and credit guaranties by the federal government, and of substitution of government agency credit for conventional financing by federal, state, or local governments. These developments tend to have a growing influence upon economic conditions. The latest example of the potency of this device is the strength in residential building that accompanied the liberalized financing terms provided in the Housing Act of 1954. Additional proposals abound for financing programs to provide highways, schools, health and welfare facilities and to stimulate investment abroad.

The purpose of such programs in the aggregate is to stimulate investment spending and their effect is to increase the demand for investment funds. However, despite their significance with regard to economic activity, developments in this sector of the credit picture are not readily susceptible to control by credit policy or debt management. Instead of being flexible, such programs are largely irreversible, since political pressures make any tightening or restraint of such activities a formidable undertaking. Consequently, the use of such programs may complicate, at least in the short run, the task of minimizing economic fluctuations.

Conclusions for the Outlook

This review of the major factors acting upon interest rates suggests that an appraisal of the outlook for interest rates requires consideration of prospective trends in business activity, in Federal Reserve policy, and in Treasury debt management operations. Furthermore, even if the appraisal of business conditions and monetary policies should prove accurate, it still remains necessary throughout to take into account the even less predictable reactions of the financial markets, which at times may accentuate and at other times moderate the effects of underlying forces upon interest rates. It should be remembered that in so sensitive an area as the money market, even relatively small shifts in demand or supply may have significant effects.

BUSINESS PROSPECTS

For 1955, most economists at the present time foresee higher levels of production and business activity. Most forecasts show gross national product in the $365–370 billion range, which is about 3 per cent above 1954. These expectations rest on the assumption of a continued high level of investment activity. If they materialize, total demands for funds are likely to exceed 1954, and economic factors will probably be working in the direction of some firming of interest rates.

Present prospects indicate that requirements for investment funds in 1955 will be large in most sectors of the market. Real estate mortgage debt outstanding registered a record increase in 1954 and is likely to grow by an even larger amount in 1955. Current expectations are for an increase in the average size of the home and perhaps lower down payments, so that mortgage debt is likely to rise rapidly despite the growth in amortization. Although financing requirements for multi-family residential construction may decline, those of commercial projects are expected to expand further. State and local financing also reached a record volume in 1954; with rising capital budgets, another large financing year is in prospect. Corporate requirements for investment funds in 1955 may be somewhat less than in 1954, since internal financing by way of depreciation charges and undistributed profits is growing. However, the decline in corporate new issues is likely to be modest.

Private demands for short-term funds are also expected to advance. With the business inventory liquidation of 1954 being superseded by the prospect of some accumulation in 1955, gross working

capital requirements of corporations are likely to increase in the year ahead, so that bank loans to business, which declined in 1954, will probably move upward. Strength is continuing in the demand for real estate loans. Consumer credit did not change importantly in 1954 but is expected to increase in 1955.

Treasury financing requirements in 1955, finally, are expected to be about the same as in 1954, with an approximate balance in the cash budget in both years. The Treasury is expected to undertake some temporary financing in the early part of 1955 and will find it necessary to raise substantial new money in the second half of the year.

Investment funds, on the other hand, may be somewhat less readily available in 1955. The past several years of high business activity have been accompanied by a record flow of funds to savings institutions, and if recent growth rates persist, the accumulation of funds with these institutions in 1955 will match or exceed 1954. However, the savings institutions in the past year were able to raise additional large amounts for investment in bonds and mortgages by sales of government obligations, on balance to the commercial banks, and this will be less feasible in 1955. In a period of expanding economic activity, the commercial banks may be expected to husband their resources in order to meet the larger borrowing requirements of their customers, the more so as the monetary authorities presumably will not make reserves as freely available as in 1954. In the face of the large requirements for investment funds in prospect for the period ahead, therefore, economic pressures are likely to operate in the direction of somewhat firmer interest rates.

RESPONSE OF CREDIT POLICY

If business and investment conditions should develop as here surmised, the Federal Reserve authorities may be expected to place continuing reliance upon the use of open-market operations in effecting day-to-day changes in the money market. Present practice is to limit open-market operations to dealings in Treasury bills, except when necessary to correct disorderly conditions in the government securities market. There are no signs of a change in this practice at the present time.

The discount rate may be expected to follow the trend of short-term interest rates, but with some lag. Changes in the discount rate as an instrument of credit policy have been used only infrequently.

Apparently the authorities prefer to make such changes as a means of emphasizing a shift in their point of view and to adjust the discount rate in the light of changes that have already taken place in money market rates.

Changes in reserve requirements are not a flexible tool of credit policy and are employed only infrequently. The reductions in 1953 and 1954 probably reflected in part a desire to bring reserve requirements to a lower level in order to provide somewhat greater flexibility for their future use. The economic environment in prospect does not suggest that further reductions will be made in the near future. On the other hand, neither is an increase likely unless the strength of the economy is such as to persuade the authorities of the need for taking drastic action in the direction of credit restraint.

On balance, a continuation of the moderate business upturn is likely to be accompanied by a shift from the recent policy of active credit ease toward a less liberal policy in providing bank reserves. The authorities, under this assumption, would continue to provide some reserves to the banking system, presumably through open-market operations, but not as freely as in the period from mid-1953 to late 1954. Such a policy might result in some firming of interest rates but would not be expected to lead to real credit stringency. The authorities are likely to act with caution and will probably be loath to take any steps which might inhibit or retard business expansion if the economy is moving at a gradual and orderly pace.

DEBT MANAGEMENT

Looking ahead, it is reasonable to suppose that the Treasury, in managing the debt, will continue to adapt its policies to the state of the economy. If, as here assumed, the improvement in the economy continues moderate, the same considerations that prompted the Treasury to refrain from issuing long-term bonds to the market after mid-1953 may continue to color Treasury operations in the months ahead.

One deterrent to aggressive efforts to raise new money through the issuance of long-term Governments is the possibility that such action would reduce the flow of funds available for investment, which in turn might jeopardize the high level of investment activity that is providing such great support to the economy. The major investment institutions, such as life insurance companies, mutual savings banks, and pension funds, have adequate investment outlets

available at rates more attractive than those on government securities, and thus have little interest at this time in adding to their holdings of Treasury obligations. The pension funds of state and local governments might be somewhat more receptive to such an offering. However, it might be extremely difficult for the Treasury to tap this or other sectors of the market energetically without incurring undesirable repercussions in the field of interest rates.

At the same time, the economic environment in prospect for 1955 is likely to be less favorable to the lengthening of commercial bank portfolios of government securities than was the case in 1954. In the past year, the commercial banks replaced maturing issues with obligations of intermediate term, and the average life of bank-held Governments increased significantly as a result. The lengthening already achieved, the more favorable loan outlook, and the probability that bank reserves will be less readily available in 1955 may all operate to reduce the eagerness of the commercial banks for another extension of their holdings. This would further complicate the task of energetic debt funding.

Consequently, progress in lengthening the maturing of the Treasury debt in 1955 is likely to be fairly modest. As long as the economic upturn is moderate, the Treasury, instead of making a direct attack on the problem by the aggressive issuance of long-term securities, may well continue to take the low-pressure approach it employed with success in 1954. The practice of giving holders of maturing issues a multiple choice of new maturities will doubtless continue. Also, efforts to sell savings bonds may be emphasized further; the recent liberalization of regulations governing purchases of Series E and H bonds is a step in this direction. However, should the judgment prevail that the investment boom should properly be curtailed in order to achieve some deferment of projects to a later date, the case for a long-term bond issue would be enhanced.

At the same time, some increase in short-term government debt might not be inappropriate. Short-term Treasury obligations are an important vehicle for meeting the huge liquidity requirements of our economy. There are some indications that debt management in 1954 may have reduced the available supply of securities suitable for short-term investment below the needs of the market. A by-product of a higher volume of Treasury bills would be to facilitate credit control by increasing the supply of securities employed by the Federal Reserve in its open-market operations.

CURRENT UNCERTAINTIES

Business expectations are rarely so clear as to permit dismissal of alternatives. Within the range of the prevailing forecasts, there is ample room for differences of opinion regarding the pattern of business developments in 1955. Even relatively small changes in the economic climate might have perceptible effects upon credit demands, upon the complexion of credit and debt management policies and, consequently, upon the behavior of interest rates.

It is possible, although not probable, that the current upturn in business activity will not long persist. In that event, a policy of active credit ease would not be unexpected, and debt management would presumably be designed accordingly. The recent firming of interest rates would then probably prove short-lived.

Another alternative is that the rapid rise in economic activity that became progressively evident toward the close of 1954 may continue for some time, sparked perhaps by rapid inventory accumulation, booming construction activity, or an upsurge in consumer buying of durable goods. Under such circumstances, the Federal Reserve would prosumably permit some tightening of credit. For the Treasury, such developments would pose the question of undertaking some long-term financing as part of a program of economic stabilization. This course of developments might be accompanied by a fairly rapid firming of interest rates.

REACTIONS OF THE MARKET PLACE

A sensitive financial market, as already noted, is essential to flexible credit policy, and one of the important results of the accord has been a greater amplitude of interest rate fluctuations than prevailed in earlier years. In reviewing the forces likely to act upon interest rates, the currently significant question, therefore, is whether business expansion and a policy of some credit restraint might produce so strong a reaction in the market place as to lead to a repetition of the credit squeeze of early 1953.

In the first half of 1953, economic trends and government policies were conspicuously magnified by the reactions of the market place. Although the measures taken by the credit authorities were fairly moderate, the financial community became fearful of progressive tightness in the money market; market sentiment deteriorated and interest rates advanced sharply. Although the Federal Reserve reversed its policies in April–May, 1953, several weeks were required

before the policy change made itself felt in the market place. Ultimately, of course, the sag in business and the change in monetary policy were reflected in higher bond prices and lower interest rates.

However, it is permissible to assume that if business expansion and credit restraint materialize in the period ahead, they may produce less unsettlement in the market place than in 1953. Federal Reserve action in 1953 represented the first major use of the power of general credit control since the 1930's, and the markets were uncertain of the extent to which stringency might be carried. In retrospect, it has become apparent that the apprehension then prevailing in the financial community caused investors to miss many attractive opportunities. The credit and debt management authorities, in their turn, may also have gained from the experience of 1953, and it is possible that their pronouncements and methods may be somewhat different should the occasion repeat itself. Thus, the record of 1953–54 should reassure the financial community that while the authorities may employ credit restraint when they consider it warranted, they are not likely to permit progressive tightening of credit to asume major proportions, except probably under conditions of potent inflationary pressures.

While these considerations suggest that the credit squeeze of May–June, 1953, is not likely to be repeated on the same scale in the foreseeable future, a protracted continuation of the rapid business advance of late 1954 would increase the prospects for a more than casual increase in interest rates, even though the rise might be less rapid than in early 1953. Nor is it probable that the responsiveness of the market interest rates to changing conditions will be limited to short-term rates.